Original Articles.

CARBON MONOXIDE POISONING.

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MOST writers on the subject believe that carbon monoxide poisoning receives but scanty attention from physicians, and this is probably so since the average physician of city practice sees but few cases. Edsall points out that carbon monoxide poisoning in addition to the acute illness and possible fatality which it may cause is also responsible for the production of certain subacute or chronic disorders, and Sedgwick considers the various obscure consequences as more important than the acute poisoning. Its sequelae are varied in nature and, unless the history of the acute poisoning is known, are difficult of interpretation. Acute poisoning with its sequelae has been, of course, much better studied than the chronic forms as it is difficult to prove that carbon monoxide has been the cause of conditions found in certain persons living under bad hygienic circumstances.

Professors Sedgwick and Nichols, in their excellent report on "Coal and Water Gas," as given in the Sixth Annual Report of the State Board of Health, 1885, mention the case of a lady in fair health who began somewhat suddenly to suffer from intolerable headaches. They were worse on awakening from sleep, and wore off gradually during the day to return on the following morning. After much effort to diagnose and control the headaches her physician was told of or discovered a faint odor of illuminating gas in the room. A leak was found in a pipe running under the floor, and when it was stopped the patient quickly recovered. This was one of the simpler forms of poisoning from illuminating gas which would not be so obscure if one had the cause in mind.

Another source of poisoning is the escaping of gas from broken mains in the earth and thence into houses. This is particularly so in winter when the ground is frozen and perhaps covered with a coating of ice. Even if the ground is bare, the temperature of the houses is considerably above that of the outer air, converting them into so many chimneys to which the air in the ground is drawn from all sides. Leaks and resulting poisonings of this nature are much more obscure and difficult of solution. Pettenkoper has shown that the gas may travel many yards through the ground and reach a dwelling a considerable distance from the leak, while the odor is lost in transit. This method of producing carbon monoxide poisoning probably forms now but a trifling per cent. of the cases and is almost disregarded by the majority of writers since Pettenkoper's time.

Sedgwick recently has called attention to the insidious effects of constantly inhaling illuminating gas in houses and public places. The intoxication by carbon monoxide in factories and foundries is not uncommon, but this paper is not concerned with poisoning produced by manufacturing processes.

It is believed that obscure poisoning of various kinds plays a large part in diminishing vital resistance and in increasing susceptibility to disease. The number of acute cases is ever increasing. There are many reasons for this, such as the greater use of household appliances for cooking and heating, especially when they are used in small and ill ventilated rooms. Professor Sedgwick in a recent article in the *Journal of Infectious Diseases,* November, 1911, on "The Relation of Illuminating Gas to Public Health," calls particular attention to the increasing manufacture of water gas as the cause of a great number of carbon monoxide poisoning cases in recent years. In 1884 Professors Sedgwick and W. R. Nichols and Dr. Samuel W. Abbott predicted that if water gas should replace coal gas in Massachusetts the consequence to public health would probably be dangerous if not disastrous. Other experts of eminence took precisely the opposite ground and even ridiculed the possibility of any such consequence. Among these were Professor C. F. Chandler of Columbia University and the distinguished English chemist, Dr. E. Frankland, who stated in a letter read during the hearings, "I have no hesitation in saying that it (water gas) may be used with safety both in public buildings and private houses. I should be delighted to substitute this pure and powerful illuminating agent for the gas with which my house in London is at present supplied, although it is used in all the bedrooms."

Previous to 1885, according to Dr. S. W. Abbott, there had been only four deaths during twenty years in Massachusetts. It is a question how much reliance can be placed on this statement because of imperfect methods of recording cases. As a result of the coal and water gas agitation the Massachusetts Legislature in 1885 created a State Gas Commission and since 1888 the Commissioners have been required to keep a record of all fatalities and other subsequent results from gas poisoning.

Let us pause for a moment at this point to consider the nature of coal and water gas. Poisoning from pure carbon monoxide is extremely rare, because opportunities for its occurrence are unusual; it has occurred in laboratories and factories.

Intoxication with illuminating gas is commonly regarded as being practically carbon monoxide poisoning, but experiments have shown that its poisoning is usually more severe than from simple carbon monoxide. Nevertheless, the latter is the chief agent.

Illuminating gas is poisonous whether made from the destructive distillation of bituminous

coal, from wood or other organic substances, or derived from coal and water by their action on each other at high temperatures (water gas). It is, nevertheless, a single gas of uniform composition, and while the mixture may vary from day to day within narrow limits, the expressions "coal gas" and "water gas" stand for a reasonably definite substance or mixture. Various analyses by different chemists have shown that water gas contains about four times as much carbon monoxide as coal gas. The amount of carbonic oxide requisite to produce a fatal result varies considerably with different individuals. A variety of conditions enters into this factor. Carbon monoxide enters the system solely by inspiration unless experimentally introduced. Its chief effect is to displace the oxygen from oxyhemoglobin and form carbon monoxoglobin, thus rendering the affected portion of the red blood corpuscles incapable of performing their function as oxygen and carbon dioxide carriers.

Sedgwick and Nichols carried out numerous experiments on the relative effects of coal and water gas on animals. Their experiments and conclusions are given under four headings:—

1. With ordinary gas fixtures it is generally difficult to get more than three per cent. of illuminating gas into an ordinary room. By using one burner alone, it is difficult to exceed one per cent. The "natural ventilation" through walls and cracks is the reason for this.

2. With coal gas it is a matter of some difficulty to get into an ordinary apartment through the ordinary burners gas enough to produce upon healthy animals distinctly poisonous effects. With water gas, on the contrary, it is comparatively easy to get into an ordinary apartment through the ordinary burners gas enough to produce poisonous and even fatal effects. The same quantity of gas would be present in the room in either case. Water gas does not flow more freely or accumulate in the room any more than coal gas.

3. It does not follow that because one illuminating gas contains three, four or five times as much carbonic oxide as another that it is, therefore, only three, four or five times as dangerous to life.

4. Carbonic oxide is not a cumulative poison. That is, the breathing of a small quantity for a long time is not equivalent to the breathing of a large quantity for a short time. A similar conclusion may be drawn in all the constituents of illuminating gas. These authors state: "From the fact that carbonic oxide is not a cumulative poison and from the considerations concerning the rapid increase of danger above and the decrease of it below the 'danger line,' it follows that within certain limits the less carbonic oxide there is in illuminating gas the safer it is for public use, for about the danger line a very moderate decrease of carbonic oxide may very greatly enhance its safety, while a moderate increase may greatly multiply the dangers arising from its use. Far above and below the danger line the effect of slight variations is very little."

The record of the experiments with animals conducted by Professors Sedgwick and Nichols to prove the above conclusions may be found in the Sixth Annual Report of the State Board of Health.

Since 1890 the careful records of the State Gas Commission and the Medical Examiner's office show that more than 1,200 deaths from carbon monoxide poisoning have occurred in Massachusetts in a twenty-year period from 1890 to 1909. Sedgwick and Schneider in their recent article in the *Journal of Infectious Diseases* have compared the mortality from scarlet fever, measles and illuminating gas in Massachusetts for a period of twenty years. For example, the death-rate was:—

	Scarlet Fever	Measles.	Illuminating Gas.
1887	28.80	22.08	0.29
1898	5.25	2.05	2.91
1909	7.86	4.77	3.10

I have merely shown the changes at the end of two ten-year periods—the authors give the death-rate for each year in tabular form.

Since 1890 some companies have made only water gas, others only coal gas, while many have made a mixture of the two, and some have made both intermittently. For a short time (1900) the amount of water gas manufactured was much less, and there was a corresponding diminution in the number of gas poisoning cases. Sedgwick and Schneider give an interesting table derived from the Reports of the Gas Commissioners showing the amounts of illuminating gas (coal gas and water gas) manufactured each year in Massachusetts. Figures in this table show a marked increase in water gas and a corresponding increase in the number of deaths. In 1886 the total coal and water gas made in million cubic feet was 2,625, and water gas 12, with no deaths. In 1896, total 4,639, water gas 3,090, and 63 deaths. In 1908, total 10,902, water gas 4,862 and 148 deaths. In 1900 and 1901 when the New England Gas and Coke Company installed a large coal gas plant in Everett, the effect of the introduction of their product was to cause an actual decrease in the water gas manufacture in the state and in 1901 a significant diminution in the number of deaths from gas poisoinng.

There were 174 cases of illuminating gas poisoning admitted to the Boston City Hospital from 1900 to 1910 inclusive. Of this number, 35 had a definite history of attempted suicide, and 27 had been drinking more or less heavily before the accident; 8 gave a history of being overcome while at work, principally in trenches; 2 cases were due to slot gas machines, the persons going to bed with the gas lighted, the gas giving out in the night but being started up in the early morning by somebody depositing the requisite coin. There were half a dozen cases of blowing out the gas, this accident occurring with

foreigners of the peasant type recently arrived in America. Most of the non-fatal cases fully recovered in from two to four days. In cases that recovered from coma in two to four days and then died, the death was usually caused by pneumonia or by some pathological condition which had existed prior to the exposure and which was precipitated by the gas poisoning. All of the nineteen cases in this series which died were accidental as far as could be ascertained. No one of the 35 cases of attempted suicide proved fatal. Eleven died from gas poisoning without complications, three cases were complicated by pneumonia, two by burns, one by uremia and one by cerebral embolus. With reference to the subsequent effects of acute gas poisoning, we have been unable to find the record of but three re-admissions, all men and admitted for alcoholism.

It would be natural to ask how it is that the Boston City Hospital had only 174 cases admitted in eleven years when in the year 1910 alone there were 80 cases of gas poisoning in the city of Boston. It is probably the only point which this paper will show, viz., that with the appalling number of cases as shown by the Report of the Gas Commission of Massachusetts so few ever have a chance for treatment because of immediately fatal results. Forty-two of the 80 cases in Boston in 1910 died, leaving 38 non-fatal cases, 21 of whom were received at the hospital.

The crux of the matter is that the increased amount of carbon monoxide in water gas makes a small volume of gas fatal in a much shorter time. Coal gas by its very strong odor made its presence known sooner to other inmates of the house, and while the victim might be unconscious when found, he had not as a rule inhaled sufficient carbon monoxide to make treatment useless.

A comparison of figures shows that with the large amount of water gas, containing about four times as much carbon monoxide as does coal gas and having a less striking odor, many victims are fatally poisoned by a volume of gas which in the same cubic space and length of time would have resulted only in unconsciousness and are therefore dead or nearly dead when found.

The cases were as follows:—

	Admitted to the Boston City Hospital			In Boston and Suburbs					
				Fatal Cases			Non-Fatal Cases		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
1900	5	1	6	21	3	24	19	6	25
1901	13	6	19	16	0	16	159	4	163
1902	5	7	12	25	3	33	49	7	56
1903	8	9	17	20	6	26	25	25	50
1904	9	5	14	22	2	24	19	9	28
1905	8	1	9	22	6	28	22	11	33
1906	10	4	14	17	14	31	28	15	43
1907	9	8	17	45	25	70	32	15	47
1908	21	8	29	26	16	42	33	9	42
1909	13	2	15	36	8	44	22	14	36
1910	13	9	22	36	9	45	33	10	43

The seasonal distribution was as follows:—

January	15	July	2
February	10	August	7
March	16	September	9
April	19	October	15
May	11	November	18
June	9	December	40

In most of our cases the patients felt a sense of drowsiness, to which they yielded and could tell nothing more about themselves. A few complained of headache and most all had severe nausea and vomiting. Some noticed the odor of gas in the room, but paid no attention to it and remembered nothing else until they recovered consciousness in the hospital.

A rather large number of the cases have this record:

Skin mottled and lips and lobes of the ears cyanosed. Unconscious; stertorous respiration; involuntary dejecta; odor of gas on breath. In one case the urine drawn by catheter had a strong odor of gas. The eyelids react when the lashes are touched. Conjunctivae suffused. Pupils contracted but react to light. Eyeballs immovable. Teeth slightly clinched. Mucus on lips. Arms slightly flexed at elbows. In one case which showed the above signs, the man had gone to bed with the gas lighted in a house supplied by a slot machine. At five in the morning, another inmate put a quarter in the machine and the patient was found at seven o'clock in the condition as detailed above. The gas company estimated that from 3 to 3.5 feet of gas had escaped into the room. The patient was mentally confused for several days but was discharged well after remaining nine days in the hospital. Case 11 showed rigid flexion of forearms and wrists and the feet in plantar flexion.

Most of this series where there were marked reflex changes the patients were suffering from organic nervous disease before the gas poisoning.

Treatment. Prophylaxis is of the greatest importance. Sedgwick and Schneider think that we should return to the use of coal gas exclusively, believing that with its much lessened power to poison, the majority of cases would be discovered in time to save their lives. Even if one-half of the deaths are voluntary or suicidal, as physicians we cannot overlook this part of the question. Within the last few years the state of Massachusetts has sought by law to regulate the sale of poisons and firearms, and may well regard with concern the general distribution to the public of a dangerous gas so readily available for self destruction. It has been argued even by some excellent physicians that persons who have once displayed a suicidal intent may as well not be thwarted since sooner or later they will carry out their design. We all know of young persons who during a temporary despondency have considered suicide—the thought may never occur to them again, but if a too easy means is at hand they may yield to the impulse. We know of many persons who have confessed that they have considered suicide at some time in their lives. Again, when a form of suicide is vividly detailed

by the press, repetitions occur for a time in various parts of the country.

In the treatment of acute poisoning, the cases received principally local heat, fresh air and cardiac stimulation. In a good many cases oxygen was given, although some authors regard it as useless. In a few selected cases venesection was used with apparent relief. Cardiac stimulation was given when necessary.

I wish to express my thanks to the visiting staff for the privilege of referring to the cases, and to Dr. T. Leary, medical examiner for Norfolk County, for helpful suggestions.

OLD AND RECENT IDEAS CONCERNING TREATMENT OF FLAT-FOOT.

BY H. W. MARSHALL, M.D., BOSTON.

THE importance of foot defects, included in the class of strains and weaknesses of the feet, can be appreciated properly only from the enormous numbers of persons who are wearing orthopedic appliances or shoes of orthopedic design. Arch supports, shoes with correct shapes, shoes with flexible shanks, others with rigid shanks, and shoes with heels or soles constructed to alter the position of the feet in weight-bearing attitudes, are very familiar now in many stores in all large cities.

Additional interest is lent to the present situation by the circumstance that wear of these special shoes and supports is determined now more by business enterprise, and by fancies of customers, than by medical advice and supervision. This condition of affairs has arisen naturally because such foot ailments in the majority of instances are not very grave in character. The general public is free to choose without medical opinion, and with good success very often, such kinds and varieties as appeal to their fancies, or those styles which friends have found to be beneficial.

Orthopedists and some enterprising shoe men during the period of development of new ideas about flat-foot have studied the anatomy of the feet again with care, so that nearly all important pathological changes have been described now in great detail.

It is very generally known there are longitudinal and transverse arches in the feet that can become weakened. The anatomical arrangement of the small bones of the feet, their normal positions and pathological variations have been examined; and it is well understood that, when weight is borne, pressure from above tends to push the astragalus downward and inward as it rests upon the os calcis beneath. Also that there may be considerable tilting of the calcaneum when the bones of the leg, with the astragalus, in bad cases of flat-foot, tend to slip down off the inner side of the foot until they are checked by ligaments and muscles, and as the foot tends to slip forward.

It is a familiar fact that these tendencies are resisted by the calcaneonavicular, the deltoid and the interosseous ligaments; and that when marked relaxations occur considerable slipping in the astragalonavicular joint takes place and that the scaphoid bone becomes very prominent. It is also known that other small joints of the tarsus are influenced in lesser degrees.

In typical flat-foot the front of the foot is forced outward and downward. The internal malleolus is more prominent, and motions of the feet are restricted. Adduction of the forefoot becomes greatly restricted, plantar flexion is limited, and dorsal flexion appears increased.

Special studies have been so numerous that a few of them only can be mentioned. R. B. Osgood[1] has studied, among other things, the strength of muscles in normal and weakened feet. He concludes that the adductors of the feet are stronger than the abductor group in normal persons, and he found in acute flat-foot that the normal average ratio of strength, 10:8, became 10:12 in weakened feet. Lloyd T. Brown[2] has considered the action of extrinsic and intrinsic muscles of the foot from an anatomical and mechanical standpoint. And the studies of Whitman, Lovett, Dane, Legg, Cotton, Feiss, Gibney, Thomas, and many others are too extensive and too important to be enumerated briefly.

It has been shown that the first metatarsal bone with its phalangeal bones is most important in locomotion, while the outer metatarsals are essential in maintaining the balance when standing.

In text-books, Whitman,[3] Goldthwait, Painter and Osgood,[4] Bradford and Lovett,[5] and others have described the two-fold function of the foot as a passive support of the weight of the body, and as an active lever to raise and propel it. And they have explained the many anatomical details which relate to development of weakness and deformities. Deformed feet of the Chinese have been made objects of study; and great attention has been paid to normal shapes of normal feet in the barefooted races. Anatomical dissections have been made which show that gradual anatomical changes in the bones take place, as the bones adjust themselves to new conditions long imposed upon them. It is now well understood that shapes of shoes have much to do with development of weaknesses and strains, that extreme styles in pointed shoes in the past contributed perhaps as much as any one thing in calling attention to foot defects, and in leading to corrections in footwear. It is known that present styles of high heels are throwing disproportionate pressures upon anterior arches, and that the latter in consequence are giving out more frequently now. It is known that, notwithstanding the fact persons possess high arches, that they suffer frequently with foot strains; and causes of foot strains, as mentioned in text-books of orthopedic surgery, are described as being

due to faulty footwear; occupations that compel unusual amounts of standing; injuries, especially fractures of leg bones at the ankle that result in subsequent abnormal pronated positions of the feet; genu valgum; debilitated states; rachitis; great increase in weight, etc.

However, in spite of the precise knowledge which has accumulated, there still are a very considerable number of persons who are made worse, instead of better, by wearing shoes of orthopedic shapes. Others are made worse by shoes with flexible shanks, many are not improved by arch supports, and some continue to have weak feet after trying all methods now in use.

These facts are as well established as the ones that many individuals are benefited; and unfavorable results need understanding if successes are to be attained with more uniformity. The first important reason for failure lies in the circumstance already mentioned, e.g., that wearing of orthopedic shoes and supports often is dependent simply upon whims of customers, upon experiences of their friends, upon persuasions of persons selling the articles, instead of upon physiological requirements of individuals' conditions. A second reason lies in the failures of physicians to understand precisely the needs of their patients; and it is interesting to trace past developments which have led to present medical ideas.

When attention was first drawn to the barefoot tribes, it was seen that forms of their feet differed materially from those found in persons who have been cramped always in shoes. As a result of these observations, correctly shaped shoes were constructed with broad toes and with room for expansion of the anterior part of the foot, and especially to avoid outward deflection of the great toes. And then it was found that some persons with very deformed feet were unable to walk in these improved styles. They were more comfortable in their own improperly shaped ones.

Long subjection to tight shoes had changed bones and ligaments structurally, so that normal shapes were as injurious to these persons as modern styles would be to savages. It came to be realized then that many individuals are no longer predatory savages, as regards their feet; and that it is necessary to fit them with shoes suited to their existing deformities. Physicians learned that in extreme cases natural shapes could be restored only very gradually, and that consideration of other factors besides forms of footwear must be kept in mind. Some foot deformities now are recognized to go so far as to necessitate forcible manipulations and operations to restore even approximately normal conditions again.

With arch supports there has been a similar negative phase in progress; and from the positive benefit which many persons have derived, others have been induced to try supports with unfavorable results. It has been found that persons with acute foot strain frequently have so much tenderness that additional pressures upon the arches cannot be endured. Others are relieved for short times, and then have slow return of painful symptoms from muscle weakness. Frequently the latter are benefited by minimizing instead of increasing artificial aids, and by exercising the feet with flexible shoes.

Flexible shoes consequently have been tried in routine manner like shoes with orthopedic shapes and as arch supports have been used; and many persons have been relieved by them, while many others find that they cannot wear flexible shoes.

From these various groups of cases, and from advocacy of single routine forms of treatment, have arisen partisanships which convincingly show that numerous deficiencies still exist in our understanding of flat-foot. There is need for understanding that physiological considerations, more than anatomical or pathological ones, furnish final solutions for difficulties in treatments. Treatments primarily should be designed to remedy physiological defects ahead of anatomical ones, although the latter must necessarily be corrected when they exist, because they prevent restoration of normal functions.

Structural defects are causes of present and future functional abnormalities, and simultaneously also they represent results of past physiological defects or primary congenital peculiarities. These more remote causes must be sought for, as it is possible to have perfect understanding of all anatomical peculiarities and of all pathological appearances, and yet be unable to deal with patients successfully when there is lack of understanding of underlying physiological forces which regulate health and weaknesses.

There ought to be unhesitating recognition that normal conditions in feet depend always upon a combination of elements, and never upon any one of them independently. These underlying factors are grouped into three divisions: first, the amount of weight borne and the lengths of times it is endured; secondly, the degree of healthy vitality existing at the particular time in ligaments and muscles supporting the arches that is represented by their strength; and thirdly, favorable and unfavorable qualities of blood circulating through the feet at the given time. This is the only working formula that is applicable universally to all cases, and it should come to mind as the most practical way of viewing each patient, instead of by special features alone in each one, such as shapes of feet, height of arches, occupations, body weights, physical conditions, etc.

All the latter considerations must be thought of, however, yet ideas of treatment must not stop at that stage for best results. These special details of each individual case should be fitted into the general comprehensive idea of the whole situation which has been stated. Broad comprehensive qualities are features in treatments that are often lacking, and it is purely a

matter of chance at present with many persons whether their shoes and supports are suited to their needs. Chosen without medical advice, and unnecessarily tried in many instances through curiosity rather than actual need, footwear and orthopedic appliances are worn frequently in complete ignorance of unfavorable consequences which are possible, the only guide observed being the degree of temporary comfort afforded. Yet practically it has been found that many persons are benefited for a time at least, although they have no ideas of physiological ways in which feet maintain their strength and function. And the principal complaint made by such persons is that they become very dependent upon arch supports, and that their feet become weakened by continued use of the latter.

The proper view to take toward various orthopedic devices and shoes is one of recognition that most of them have merits, and that they indicate the number of phases which any single case may pass through. This seems to be the correct idea in contrast to the erroneous one that some devices must be useless or harmful because some others are beneficial. For faults do not lie with shoes or supports as much as in defective understanding of conditions which lead to their inappropriate uses. All devices may be beneficial or harmful in turn in any selected case according as they are prescribed, or accidentally happen, to fit the needs that exist and that vary from time to time.

Indications and contra-indications can be determined, however, usually very easily from the general conception that has been stated. Health always represents a balanced state between various physiological elements; and treatments are directed always toward restoring usual ratios between these several forces. In health, if persons become heavier, then compensatory changes in strengths of muscles and ligaments are seen so that normal balances between pressures upon arches and muscle strengths are not upset. If the individual is very large instead of very small, then changes in absolute strengths of muscles and ligaments have, too, to be very great instead of small, in order to maintain the healthy balance. Absolute values of the same factor in different persons may vary within wide limits and yet be relatively unimportant. The most vital relationship always is the ratio between the different factors as they are combined in the same person. In order to restore normal conditions in weakened feet, pressures and strains, that are endured, can be diminished by supporting the arches or by subjecting them to less mechanical strain by rest, or by combining supports with partial rest.

Usually it is more convenient to begin treatment by increasing supports instead of diminishing amounts of daily activities of life. The ways of strengthening the arches are familiar. They may be artificially held with adhesive straps which extend around the sole of the foot upward upon the two sides of the lower leg, so that a part of the pressure upon the arches is taken by the pull upon these leg straps. Felt pads, spring steels, celluloid, rubber, and other varieties of support have been used. The strength of the foot may be increased also at times by regular exercises or by wearing limber shoes which, unconsciously to the wearer, exercise foot muscles more than when they are supported by thick soled boots. Improved shapes in shoes indirectly may help to strengthen the feet by allowing more natural shapes to be restored.

There is no certain way of estimating which variety of treatment will prove most beneficial except by a few simple preliminary trials with supports of some sort, alternating them with exercises; but these quickly furnish the required information.

Usually persons who walk and stand very little, and who have been wearing heavy soled shoes or supports constantly will be benefited by flexible shoes and by diminishing artificial aids, provided blood conditions remain unchanged. And vice versa, persons who use their feet continually, or have worn very thin shoes, will find temporary relief in thicker shoes and more support. Both may be followed by return of symptoms if they are long continued; and changes from time to time ought to be made, if physiological needs are to be perfectly met. A constant feature of all cases is the one that artificial aids ought to be kept down to a minimum degree from time to time; and the feet should perform their functions always as nearly normally and unaided as their strength permits. Whether patients with weak feet shall be kept off of them a part of the time, or completely, can be told from experiment and from indications furnished by the past history; and these trials should be made and right amounts quickly estimated. Changes that have to be made in these mechanical elements may vary from no change at all to complete rest in plaster casts; but in every case the mechanical factors should be thought of at least although nothing has to be done.

Vascular elements in development of foot strains are ones most commonly poorly understood, despite the fact they undoubtedly are as important as mechanical features. It is possible, though rarely advisable, to cure pains in the feet from the lesser degrees of foot strains simply by medicinal tonics, iron, cathartics and eliminants without paying attention to local conditions. This medical phase of treatments, however, is lost sight of at present very commonly in search for local anatomical defects; but the important influence of vascular states is convincingly indicated nevertheless by the frequency with which debilitated conditions initiate development of foot symptoms. Debility is a matter orthopedists, as a class, have rather vague ideas about, dealing as they do mainly with tangible mechanical devices and anatomical considerations. Debilitated states are poorly

understood by all, yet there are a few rough quantitative defects in normal physiological processes which are recognizable, and which can be corrected frequently with good results.

It is known that digestive disturbances are starting points for many troubles. Normal digestive functions frequently become temporarily poor through fatigue or worries; and ordinarily harmless products of intestinal bacterial activity become increased temporarily from increased bacterial action upon the food residues left as a result of poor digestive function. Larger quantities of bacterial products than usual are absorbed in consequence, and circulate in abnormal amounts, exerting mild deleterious influences, and show themselves finally in the fluctuations of indican and allied substances in the urine. The blood stream temporarily has slightly changed proportions among its usual constituents, and if these fluctuations are repeated often, or continue long enough, they give rise indirectly or directly to mild anemias, articular pains, etc., etc. Individuals feel below their usual standards, muscle tone is lessened, and weaknesses become accentuated. Feet frequently suffer in this way; and the remedy primarily consists in diminishing amounts of useless substances in circulation by diminishing absorptions from the intestinal tract and by increasing their eliminations. This is accomplished with the aid of stimulating tonics to increase normal digestive, peristaltic and cardiac functions, by cathartics to remove food residues promptly, and by increasing the excretion of urine. Iron in some form is beneficial simultaneously to correct deficiencies that have arisen in the iron content of the blood.

These are extremely well known measures, but their importance in treatment of many types of flat-foot the writer has seen repeatedly overlooked. Many patients have been treated with strappings, plates, shoes, Thomas heels, etc., and have dragged along without being crippled, and yet without recovering their normal strength; and then, when a few weeks' attention has been paid to defects in circulating blood, normal conditions have been restored again promptly. Prescription of drugs cannot be made in haphazard ways, and their effects have to be watched as carefully as those of mechanical appliances in order to rectify the defects in alimentary tract and circulation that are producing the slightly unfavorable conditions. When it is remembered that every person's start in life begins with certain initial vitalities in each organ and in every living cell, as well as in all collectively; that these initial vitalities vary in different persons and that the blood is the common soil in which all tissues grow, then it can be realized that what is brought to, and what is taken away from, living cells by the blood stream constitute the most important influences to which tissues are subjected. If proportions of substances in circulation remain constantly favorable the individual thrives, and may grow strong and robust even from a very poor beginning; and vice versa, unfavorable quantitative proportions of vascular substances soon produce delicacy and debility in persons originally strong, as a barren soil always produces scanty crops. What is true of the person as a whole is true of his organs individually. Some organs are stronger and better developed than others at birth and often keep their lead throughout life; and if vascular conditions are unfavorable for ligaments and muscles, then these show the effects of the unfavorable influences in drooping attitudes, round shoulders, weak backs, flat feet, visceral ptoses, etc., so commonly observed. Knowledge of these changes in the blood from time to time, also the biological needs of living tissues are the matters that should have more universal understanding now when anatomical details of foot structure have been so thoroughly investigated. Some types of flat-foot, however, must be recognized to be almost, or entirely, beyond control when chronic progressive diseases of the gastro-enteric tract, kidneys, or other organs prevent correction of vascular conditions. This is true although harmful mechanical pressure and strains always can be perfectly eliminated and controlled. Patients with flat-foot in the future probably will select their own supports and shoes very frequently without advice, as now; but when they consult physicians they should receive directions that are based upon physiological principles as well as upon pathological changes. Then patients will be made to realize that no one style of shoe, or principle of treatment, is universally applicable, and that their needs necessarily change from time to time, so that a number of entirely different measures are likely to be tried before normal balance between blood, mechanical pressures, and tissue resistances is again restored.

Too much cannot be known about anatomy and pathology, yet it should be remembered that of themselves, they offer only incomplete suggestions as to proper treatments; and equally important physiological and biological needs must be understood and familiarized before functional defects can be perfectly corrected.

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—At the ninth annual meeting of the American Red Cross in Washington, announcement was made of the completion of the $300,000 fund, which was necessary in order to secure the $400,000 appropriated by Congress for the erection in Washington in memory of the women of the Civil War of a building to be used as headquarters for the Red Cross. This assures erection of the memorial at an early date.

Medical Record.

HAIR CAST OF THE STOMACH WITH REPORT OF A CASE.

BY G. A. MOORE, M.D., BROCKTON, MASS.

OF the pathological curiosities found in man, no region has yielded such an abundance as the gastro intestinal tract. The most remarkable of these are the foreign bodies, especially those found in the stomach; an enumeration of which would fill a small volume. These objects vary in size from pins, nails and screws to ketchup bottles and masses of roots and hair weighing several pounds.

With the exception of objects found in the stomachs of professional glass-eaters, knife swallowers, etc., foreign bodies may be divided roughly into two classes: First, hard objects, such as knives, spoons, nails and screws, found almost exclusively in the insane; and Second, those composed of roots, strings, rags and hair, discovered in patients a great proportion of whom are mentally sound.

To this second class of cases and especially to the foreign bodies composed of hair this paper will be limited, including a report of a case.

While these cases are not common, they can hardly be considered of rare occurrence, for after a fairly exhaustive search, the writer has found 53 mentioned in the literature.

The occurrence of bezoars or hair balls in the human stomach might well be used as an argument in favor of evolution, as they are frequently found in animals in the season when the hair is shed. In animals, however, except in certain breeds of Angora cats, serious symptoms are never observed, since the masses are usually much smaller than those found in man, and are firmly felted together, due to the projection of the outer layer of epithelial cells on the hairs. They are frequently expelled in the vomitus or feces covered with a thick coating of food particles and mucus.

In man felted masses are rarely observed, since human hair is much smoother than that of animals. The hairs are loosely woven or matted together with food particles caught in the meshes. It is probably due to the loose arrangement of the hairs, that symptoms of pyloric obstruction are rarely if ever encountered; the food either being filtered through the mass of hair or pushed past it.

Another class of foreign bodies found in sane patients merits consideration. These are the so-called gastroliths or bodies found in the stomach as a result of drinking varnish, shellac, etc., to satisfy a craving for alcoholic drink. The occurrence of gastroliths is very rare indeed as compared with hair balls. Early operation is, however, more frequently necessitated, owing to ulcerations and symptoms of obstruction.

CASE. A. B., 28 years old. Shoe factory worker. Referred to me by Dr. W. H. Pulsifer, Whitman, Mass., March 13, 1912.

F. H. Unimportant.

P. H. Had all children's diseases. Never had diphtheria, pneumonia or typhoid. Always well up to six years ago when she states she contracted syphilis. Bore two healthy children prior to 1906. The first one died of marasmus; the second, of ileocolitis. (Both died at Boston Children's Hospital.)

In 1906 a third child was born which was said to be syphilitic. Since 1906 she has occasionally noticed a rash over her body and sore spots in her mouth, nose and scalp. Has had many self-induced abortions, the last one occurring in December, 1911. Had very severe abdominal pain and high fever following last abortion, since which time she has had considerable pain and burning on micturition and frequent attacks of pain in both lower quadrants of abdomen. Catamenia: Began at 14; always regular and copious. Constant leucorrhea since 1906. Appetite always good up to beginning of present illness. No digestive disorders.

P. I. About Jan. 1, 1912, began to complain of pain in right side of abdomen on level of umbilicus, which frequently radiated over entire right side of abdomen and chest. Pain often so severe that patient was unable to breathe. The pain was never localized in the epigastrium. Soon after onset of the present illness, patient noticed a mass in abdomen just to right of the umbilicus, about the size of an orange, which has gradually increased in size. She has had frequent attacks of vomiting, lasting a few hours, at times before eating, at others, after. Vomitus frequently composed of "white slimy stuff," occasionally dark and frothy. Bowels constipated, no noticeable change of late. Usual weight 115, present weight 96.

P. E. A pale, sickly, emaciated woman, apparently suffering severe abdominal pain. Skin dry and parched, scalp clean, no ulcerations. A few small pigmented scars over left thigh and both tibiae. Pea-sized glands in left cervical region and both groins. Teeth: Upper false, lower in fair condition. Nose normal. No ulcerations. Eyes: Pupils equal, regular and react normally. Tongue clean, mucous membrane of mouth and throat pale but otherwise normal. Nothing abnormal found in lungs. Heart normal in size, sounds normal, except for slight systolic murmur at apex not transmitted. Abdomen: Moderately distended, but lax and tympanitic throughout. Moderate prominence in left hypochondrium. Moderate diastasis of recti. Considerable tenderness without spasm or rigidity over entire right side of abdomen and left hypochondrium. On palpation a very firm, rounded, movable and extremely tender mass was found extending from one and one-half inches to the right of the median line just below the level of the umbilicus to the left beneath the costal margin. The upper border of the mass was two inches below the xyphoid cartilage, the lower border one and one-half inches below the umbilicus, roughly three and one-half inches vertically by six inches transversely. On standing the entire mass sank lower down in the abdomen and extended further to the left. (See Fig. 1.)

In the dorsal position the tumor could be moved to right or left so that the fingers could be inserted between it and the costal margins. Liver dullness normal. No hilum could be felt in tumor. Splenic dullness normal. Kidneys not palpable. On careful palpation over the tumor a sense of crackling or deep crepitation could be made out. Pulsations of

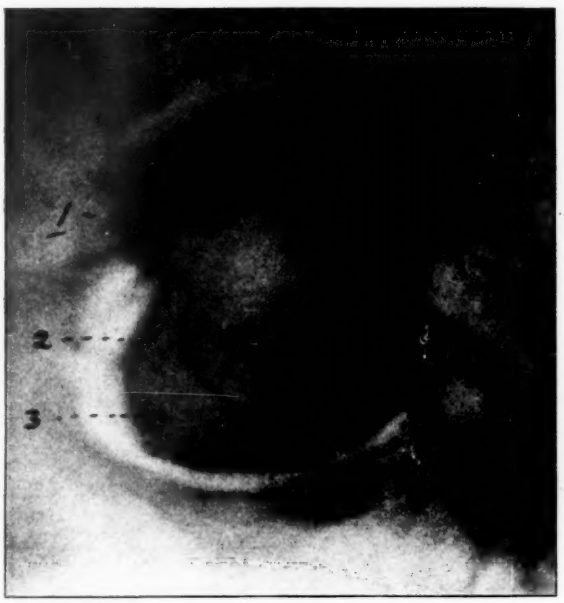

FIG. 1.

Patient standing.

1. Ensiform.
2. Umbilicus.
3. Black line indicating right and lower border of tumor.

aorta apparently transmitted through the mass, no expansile pulsations or bruit.

Vaginal Examination. No cicatrices or ulcerations observed about vulva or vaginal walls, moderate leucorrhea, cervix bilaterally lacerated, uterus normal in size, freely movable, retroflexed into hollow of sacrum. Knee jerks normal.

A provisional diagnosis of tumor of syphilitic origin was made and the patient put on iodides, which were pushed to the limit of tolerance. Under this treatment there was an apparent increase in the size of the tumor and the patient lost ground. Operation, which was at first refused, was finally consented to and the patient entered the Brockton Hospital July 7, 1912.

Physical Examination on entrance was practically the same as four months previously, except that the tumor was larger, extended further to the right and was more freely movable. Just to the right and above the umbilicus was a small area of tenderness. Over no other part of the mass was any tenderness elicited. The stomach was inflated and the lower border found to be two inches below the umbilicus while the upper border was in normal position.

Patient was put on house diet and had no gastric symptoms except a slight attack of nausea and vomiting after eating oranges. This she stated was a common occurrence.

Temperature, pulse and respirations normal. Urine normal.

Blood. Hemoglobin 70% Tallquist, white count 12,000, red count 5,300,000. Smear: Moderate achromia, otherwise normal. Differential count: Polynuclears 63%, lymphocytes 35%, transitionals 2%.

Wassermann and Noguchi reactions strongly positive.

The diagnoses considered were: (1) Mesenteric tumor of specific, malignant or tubercular origin. (2) Omental tumor. (3) Spleen. (4) Kidney. (5) Fecal impaction. Of the provisional diagnoses a malignant tumor of the mesentery seemed the most probable in view of the fact that it had increased in size under forced antisyphilitic treatment. Gumma of the mesenteric glands was the next choice. Omental tumor was thought to be improbable as there was tympany over the entire tumor. Spleen was ruled out by absence of a hilum in the tumor and by the presence of normal splenic dulness.

A kidney would hardly be as freely movable nor would there be tympany over the entire mass. The firm consistency, form and absence of pitting on pressure, ruled out fecal impaction.

The patient's general condition had not improved in the four months she had been under observation, the tumor had increased in size and she still complained of occasional pains in the right hypochondrium. Exploration was advised in the hope of finding an operable condition.

Operation July 19, 1912. Dorsal position, five-inch median incision from xyphoid to below umbilicus. Peritoneum opened revealing normal omentum. Mesentery and transverse colon normal. Nothing abnormal in gall-gladder and ducts. Spleen normal. Stomach: upper border in normal position, lower border about two inches below umbilicus, apparently completely filled by a large, smooth, sausage-shaped mass roughly nodular near the pylorus. Stomach was partially delivered from the abdomen and carefully walled off. Silk stay sutures were then placed in the anterior wall and a three and one-half inch incision made between the stays from the lesser to the greater curvature of the stomach about three inches from the pylorus. Through this opening the tumor, which proved to be a mass of human hair, was delivered. The upper pole of the mass extended up into the esophagus about two inches and the lower pole rested against the pylorus. (See Fig. 2.)

The stomach was carefully sponged out. No ulcerations were found, mucosa was moderately injected. Stomach incision was closed with three rows of Lembert sutures, No. 1 chromic-gut through mucosa and two rows of silk in muscular and serous coats. Abdominal wound was closed in layers with chromic and silk-worm gut.

Convalescence was uneventful and the patient was discharged well Aug. 7, 1912. She persistenly denied ever having eaten any hair. Patient was last seen Sept. 8, 1913. Health has been excellent since operation, except of late she has "occasional attacks of dyspepsia."

The mass of hair shown in Fig. 2 was found to be composed entirely of long, curly black hairs, loosely woven together, between the meshes of which were many food particles. It weighed before being washed and dried thirty-one ounces. For dimensions see Fig. 2.

The odor from the mass was not unlike that of a very ripe Limburger cheese. The patient's hair was light brown and very thin; but according to Bell[1] the prolonged action of the gastric juice on human hair deepens the shade.

In reviewing the case after operation, the chief error in diagnosis seemed to be in discrediting the patient's gastric history on account

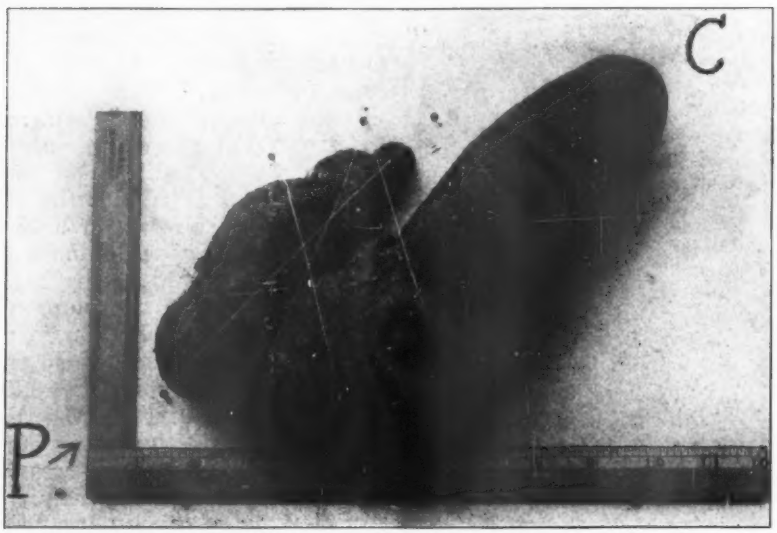

FIG. 2.

Tumor suspended approximately in position it occupied in stomach. Scale showing dimensions. P: Pole resting against pylorus. C: Pole extending up into esophagus.

of her freedom from symptoms while under observation in the hospital. Had a stomach tube been passed, it would doubtless have been obstructed by the mass of hair extending up into the oesophagus. Washing out the stomach, had it been possible, would probably have brought back a few hairs in the wash water as occurred in Hüttenbach's[2] case. X-ray after a bismuth meal would have shown the mass in the stomach. After entrance to the hospital the patient was able to eat anything and was practically free from any gastric disturbance, which led the writer to believe that had there been any symptoms previously, they were of minor importance.

A careful review of the literature on the subject of hair balls was made by Butterworth[3] in 1909 with a brief resumé of the forty-two cases which he found reported. To these cases I am able to add eleven[4] more from the literature, which with my own makes the present number reported fifty-four.

The important conclusions to be drawn from a study of these cases are that:

(1) This is a condition rarely found in men. Forty-eight or over eighty-nine per cent. of the cases were girls or young women, the average age of whom was nineteen and one-half years. This, however, is the age at operation or death. Where the duration of the habit has been carefully inquired into, it has been found to extend over periods varying from two to twenty-two years, which would tend to verify the statement made by many authors that the habit of hair eating is most frequently formed in childhood when the hair is worn loose or in long braids.

(2) Confession of the habit before or after operation, was obtained in less than half of the cases. Therefore, a denial of having eaten hair as in my case is of very little importance.

(3) The prevalent idea that foreign bodies in the gastro-intestinal canal are found only in the insane is erroneous. But six or eleven per cent. of the entire number were mentally deficient or insane.

(4) Nausea or vomiting, though mentioned in but twenty-eight of the cases, probably occurs more frequently, as gastric symptoms are less pronounced, when the patients are kept at rest. Hematemesis, which is considered an important symptom by English writers, is of rare occurrence. In only three, or five per cent., of the reported cases was it observed. Doubtless, this is due to the fact that the masses of hair caused ulceration in but seven cases.

(5) In thirty-nine of the cases a tumor was reported to have been found which was situated in the epigastrium in eighteen patients, in other regions of the abdomen in eleven cases, and the location is not mentioned in ten. These masses are sausage-shaped, very firm, smooth and freely movable.

(6) Of the diagnoses suggested, the spleen seems to be the most frequent offender, being reported in eight cases, malignant tumor in five cases, floating kidney in four cases. Omental tumor, tubercular infiltration, twin pregnancy, hydatid, gumma and cyst of the pancreas are the rarer diagnoses.

(7) The masses of hair vary in size with the duration of the habit and the amount that has been passed in the stool. The largest reported by Mermet D'Hautville[5] weighed six pounds, the smallest two and one-quarter ounces, Thorburn's reported by Pell-Ilderton[6].

Prognosis apparently is uninfluenced by the size of the tumor, the mortality being as high in the cases where large masses are found as in those where only a few ounces had been ingested.

(8) Regarding treatment of these cases, little need be said. Statistics, especially of the earlier cases, prove conclusively the futility of expect-

ant methods. Of the twenty-two cases treated without operation, nineteen died, a mortality of eighty-six per cent. Three vomited masses of hair or passed hair in the stools and recovered.

Twenty-eight patients were operated upon with two deaths, a mortality of seven per cent. In the two fatal cases, the masses of hair had passed into the small intestine and caused obstruction. In four of the cases treatment and result are not mentioned.

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THE WORKMEN'S COMPENSATION LAW AND THE PHYSICIAN.*

BY HON. JAMES B. CARROLL,

Chairman, Massachusetts Industrial Accident Board.

As the Workmen's Compensation law has worked out, it is quite evident that the provision which provides for "reasonable medical and hospital bills" for two weeks is unsatisfactory from many points of view. This waiting period of two weeks was originally intended to stop malingering, and fraudulent claims for disability. But it has been shown to the Industrial Accident Board in many ways that when there is a real disability, it is a great hardship for the injured employee to have to wait two weeks before his compensation begins, and this has already brought great suffering to the families of many injured workmen.

In addition to this, it is also manifest that in many cases the two weeks medical attention, which is all that can be legally claimed, is not sufficient in all cases. Only injuries of minor character can be cured in two weeks, and when men are seriously injured and require the attention of a nurse and a doctor more than two weeks, the law is entirely inadequate to fit such cases. In many cases it is quite conceivable that the injured workman might receive compensation at the maximum of $10.00 a week, and still not receive enough to pay his doctor's bill, and that this law, which was intended to relieve the families of workmen injured in industry, would operate to bear down very hard upon them.

But in all these cases, if the medical profession and the public generally will realize the importance of the question, we hope to be able to present the defects of the law to the Legislature in such a manner as to bring relief.

The original medical problems arising under the Act have been at least partially solved by the selection of a committee of seven representative physicians, who from a patriotic desire to benefit the industrial classes primarily benefited by the Act, and to place the medical profession in a proper attitude towards it, have untiringly and unselfishly spent a large amount of time in working out this matter.

That medical matters relating to the Act, under consideration by the Medical Advisory Committee, have been finally settled, cannot, however, be claimed. The desire for dividends, at whatever cost, on the part of certain insurance corporations, and the fact that there are undoubtedly some physicians who are greedy to take advantage of the Act, in order to get fees which they otherwise could not hope to obtain, will probably continue to make trouble. But, happily, the road has been cleared towards an understanding, which we hope will prove satisfactory all around.

When the Act was passed there was no doubt that a majority of the physicians of the State felt the Act was an unwarranted infringement of their rights, and at the meeting of the physicians at the State House, with the Industrial Accident Board, the hostility on the part of the majority of the physicians was only thinly veiled, only to end up with a better understanding all around, and a more charitable appreciation by the physicians that the Industrial Accident Board understood the rights and obligations of the profession.

At this meeting, and in its subsequent actions, the Industrial Accident Board has tried to show that it considers only the best interests of the physicians, and that in the long run, any solution of this matter, which does not satisfy the honest physician who is ready to deal squarely with this subject, cannot be a satisfactory one.

Contract Physicians. When it can be shown, as in one city, that the work formerly done by four or more physicians and paid for at the rate of $5,000 a year, is turned over to one physician, at the rate of $1,200 a year, the contract system, as a whole, cannot justly be defended. Even if it can be shown that the contract system of treating injured employees may work out satisfactorily in rare cases, as a rule it is bound to create trouble. The injured workmen will not, in the majority of cases, receive as satisfactory or skilful treatment, and even the principal object sought by the insurance company favoring the contract system, to wit: The reduction of the cost of medical services, will be a failure, because in the end things of this kind which are cheap, are likely to prove more costly.

Benefits. The medical profession was benefited by the Workmen's Compensation Act in many ways. From the standpoint of money, it

* Read before the Worcester District Medical Society, Sept. 10, 1913.

can be shown that the doctors will get more for services to injured people than was paid out for all kinds of claims, under the former Employers' Liability Act.

But the money in this matter is the least important consideration. Workmen's compensation is only the beginning of a chain of laws to insure workmen against accidents, disease, and ultimately, perhaps old age, and even unemployment.

It is easy to conceive with the progress of these laws, unless properly safeguarded, they may result in the practical enslavement of the medical profession to a bureaucracy created by legislative act. The recent history of certain European countries will bear this out. The Industrial Accident Board has foreseen the possibility in such laws, and this is the reason why such extreme care has been taken that the initial steps in planning procedure shall be along lines approved by the profession generally.

In criticizing the inevitable mistakes of the Board, or of the Medical Advisory Committee of seven, chosen by the medical men themselves, doctors should not forget that the Board and this Committee have always kept in view the ideal of the future of the medical profession who, when things work out as planned, will be left free from the bureaucratic trammels and retain all the rights of which, in the progress of social laws in European countries, in large measure they have already been deprived.

Fees. It seems to the Industrial Accident Board, and to the medical men who have been assisting them in trying to solve the medical problems of this work, that it will be absolutely necessary shortly to agree that the medical fee table shall be put on an industrial basis, and once the principle that industrial accidents shall be classed on an industrial basis, different from the fees in private practice, is established, the whole question of fees will gradually be settled.

Hospitals. In regard to patients who are treated in hospitals, the present law is full of contradictions, and there are many questions to be decided. The injured workman taken to his home is entitled, by virtue of the agreement which the Board has worked out with the insurance companies, to send for his own doctor, but is not entitled to any reimbursement for his board or care. If he goes to a hospital, in ordinary cases the doctor is not entitled to any payment for his services, but board and care are paid for by the insurance company. Many of the hospitals in Massachusetts are charging the insurance companies for the board and care of injured workmen, an amount less than it actually costs them for food.

The Industrial Accident Board is now arranging a conference with hospital superintendents, at which conference charges for hospital services to injured workmen shall be determined, and also the rights of the staff physicians to charge fees to injured employees.

In addition to this, an attempt will be made to define the proper procedure in regard to making employees who are injured, private patients. And it is to be hoped that this conference will result in some kind of an agreement as to the principles of justice which are governing these matters.

THE PASSING OF PARANOIA.*

BY JOHN B. MACDONALD, M.D., HATHORNE, MASS.,

Assistant Superintendent, Danvers State Hospital.

IN the Kraepelin sense paranoia may be regarded not as a disease process but a variety of psychical mal-development showing itself in a morbidly perverted reaction to the problems and affairs of life. Or, to use the words of Meyer, "it is the fulfilment of a fate of peculiar make-up." The disease-picture, if we may apply the term to a condition which is but the expression of an anomaly dependent upon evolutional forces, limits the application of the name true paranoia to a type of individuals perhaps more commonly met outside than inside the walls of institutions. Adhering strictly to Kraepelin's conception we would expect them, for the most part, to be able to adjust themselves after a fashion to their environment, without serious conflict, though often perilously near it.

Briefly stated, as I understand them, the characteristics of true paranoia are delusions representing an unfolding and elaboration of thought processes normal to the make-up of the individual, distinguished by a perverted but clear logic, contact with reality, and originating from actual occurrences; a chronic, incurable course, unyielding faith in, though not necessarily fixity of, the delusions; absence of intellectual impairment and perfect retention of the integrity of the personality.

Upon this hypothesis the task of classifying the true paranoiacs among the insane in institutions is beset with extreme difficulties and perplexities. To determine with any assurance of correctness a diagnosis of this kind in the early stages of a psychosis, one needs not only a clear insight into the nature of this abnormality of mental make-up, a knowledge of the changed opinions on the problem, the variety and number of which indicate they are but stages on the road to a more complete understanding of the subject, but also hindsight and foresight beyond the ordinary endowment of mortals. In determining the existence and value of a peculiar trend arising from make-up as a factor, and in prejudging and fortelling the absence of intellectual impairment and the retention of the integrity of the personality in advance of the prolonged and chronic paranoiac career, the prac-

* Read at a meeting of the New England Society of Psychiatry September, 1913. Danvers State Hospital Contributions, No. 45.

tice of psychiatry becomes a decidedly more intricate and delicate business than the toughest sort of theorizing.

The wealth of material available for study in the case records of the Danvers State Hospital, and the method of case-indexing carried on there for years, offer a fine opportunity for checking up end-results in just such cases as these in the diagnosis of which terminal conditions play so important a part. For the purposes of this meeting we have made a somewhat hurried study of cases diagnosed paranoia and entered as such upon our index-cards. The series undergoing this review comprises all cases so classified since the year 1884, a period sufficiently long in most cases for the detection of deterioration, or developmental symptoms not in accord with Kraepelin's definition. The result of this review by present-day standards of classification is anything but encouraging to one ambitious of attaining to that degree of skill in psychiatric diagnostics involving the power of prophecy. From another point of view it is interesting when considered in relation to the different conceptions of paranoia prevailing at different periods, the incidence of cases for a certain series of years varying according to the trend of psychiatric thought of the time, and marking off quite distinctly the stages of development of our present-day notion of paranoia.

In the twenty-nine years under review the number of admissions primarily classified as cases of paranoia was 51. In the first 15 years of the period we find only three cases, admitted one, each, in the years 1884, 1888, and 1899. The following four years, 1900 to 1903 inclusive, are remarkable by reason of the great increase of cases under this classification, the number comprising 37 or 72.5% of the total for the twenty-nine years. This increased incidence corresponds fairly exactly with the period when the Kraft-Ebbing conception of paranoia was orthodox doctrine. Hallucinations formed an important part in the disease-picture of this time, and mental deterioration, while not considered an integral part of the pathological process was not at all uncommon, the prognosis in this respect being uncertain, depending upon what was considered the accidental development of intercurrent diseases, mania, melancholia, etc., to which it would seem this class of cases was regarded as particularly susceptible.

The influence of the Kraepelin school is seen in the markedly diminished incidence since 1904, —a total of 11 cases for the years 1904 to 1909 inclusive, and the latter year marks the last appearance on our records of a case under this classification.

Of the total 51 cases originally placed in this group, the later histories of 35 show the development of symptoms, or a termination, inconsistent with the primary diagnosis. Of the remaining 16 cases five were under observation for periods not exceeding one year, and four not exceeding two years. In these cases the lack of an adequate after-history following their removal from the hospital renders it expedient to consider them apart as cases where clinical judgment must be suspended for lack of evidence as to their final condition.

We have thus a clear margin of error of 68.6% in the original classification, and ruling out cases not sufficiently long under observation the number of "possibles" determined is reduced to 7 or 13.7% of the total originally classified as cases of paranoia.

In the re-classification of the 35 cases showing the development of symptoms or a termination inconsistent with the paranoia concept, evidence of deterioration was found in 30 cases, or 85% of the number. Of these, probable dementia praecoxes and paranoid conditions comprised the majority. Five cases of the group recovered, one being an acute paranoic condition, two manic-depressive and two alcoholics.

Hallucinations formed a part of the disease-picture in all but three cases of this group. Two of these three presented conditions of beginning apathy and deterioration at admission and the previous history as respecting hallucinosis was inconclusive. In only one of the whole group could it be said with any degree of certainty that hallucinations were non-existant at any stage of the psychosis.

On the other hand in the total of seven "possible" cases hallucinations were definitely determined in only one case. Even here the question of the existence of hallucinations, and the diagnosis, may be open to doubt, the patient being a person of criminalistic tendencies who excused his acts in this connection on the ground that he was driven to them by the promptings of a devil which resided within him and urged him on by audible commands when the opportunity of gain by breaking, entering and stealing was favorable. Strong ideas of reference and illusional misinterpretations gave a pseudo-hallucinatory coloring to the picture in another of these cases.

Summing up our findings by this review of case histories, attention is directed to the relationship between the incidence of cases and the stages of development of our present-day conception of paranoia; the large margin of errors in the classification of early years when the question of prognosis and the study of life histories formed an insignificant or unimportant factor in diagnosis, the rapid decrease in number of cases on record coincident with the acceptance of Kraepelin's idea of absence of intellectual impairment as an essential condition of the picture down to the more recent years when the psychiatric trend seems to have caused "the passing of true paranoia" from the list of the common psychoses. Of equal interest are the findings in relation to hallucinosis, the prevalence of this symptom at some stage of the psychoses in those cases with a mistaken classification of paranoia, and its practical absence in those where the original diagnosis was sustained.

Clinical Department.

REPORT OF A CASE OF BRACHIAL NEURITIS DUE TO PERIOSTITIS OF RIB.

BY R. W. FRENCH, M.D., FALL RIVER, MASS.

THE following case seems interesting because of its rarity and the fact that the condition escaped unrecognized for many years.

The patient, a woman of forty, single, a native of Canada, presented herself at the Highland Hospital, Fall River, for treatment. Her family history and past history were both good. Her present trouble began fifteen years ago and has consisted solely of pain in the third finger of the left hand. It was of very gradual onset, soon became persistent and steadily increased in severity. There was no history of injury nor was there any reason to suspect that her occupation, a dressmaker, contributed to the cause.

For five years she had not worn a glove on the affected hand, inasmuch as contact of the finger tip with any object caused acute pain, as did also gently tapping the end of the finger. Motion of the finger, however, caused no added discomfort.

For the past three years it had been severe enough to keep her awake unless she took aspirin. At first five grains were sufficient, but at the time that she entered the hospital, it required fifteen grains to control the pain so that she could obtain sleep. She was never awakened by the pain.

Various local treatments and internal medications had been tried, and section of the digital branches of the median nerve along the sides of the finger had been proposed.

Local examination was negative, except for acute pain which was caused by tapping the finger tip. In the routine physical examination, however, a small, hard, fixed mass was found just above the left clavicle. It was not tender, but pressure on it increased markedly the pain in the finger. Physical examination was otherwise not remarkable. X-ray examination excluded the possibility of a cervical rib and showed a faint outline of the mass, apparently connected to the superior surface of the first rib.

At operation an incision was made over the mass and dissection carried down to the brachial plexus, one trunk of which was found resting upon an indurated nodule, 2 c.m. in diameter, involving the first rib. The nerve trunk was retracted and the nodule together with a portion of the rib, 3.5 c.m. long, was resected. Subsequent examination of this specimen showed a periostitis. Her convalescence was rapid and uneventful.

She reports now, a year following the operation, that she has had no recurrence of the pain in her finger, and feels perfectly well.

—The secretary of the Michigan State Board of Health has informed the health officer of Benton Harbor that the state has no provision for the care of leners and cannot, therefore, assume responsibility for Jacob Goldstein. There is no state institution to which Goldstein can be admitted.

Jour. Am. Med. Asso.

Medical Progress.

PROGRESS IN GYNECOLOGY.

BY STEPHEN RUSHMORE, M.D., BOSTON.

FASCIA TRANSPLANTATION.

FREE fascia transplantation in plastic operations is a procedure which has proved of value in a number of applications. Ach[1] has employed it successfully in fixation of the rectum and of the kidney.

In the treatment of floating kidney the steps of the operation are as follows: A vertical incision is made over the edge of the sacro-lumbalis eight to ten centimeters long, exposing the kidney. The necessary displacement is easy. A longitudinal incision is made on the posterior surface of the kidney through the capsula fibrosa, followed by a similar incision on the anterior surface. The capsule is then freed from one incision to the other over the convexity of the kidney by blunt dissection. A strip of fascia from the fascia lata, six centimeters wide and twenty centimeters long, is then drawn under the fibrous capsule from one incision to the other, and the two incisions are closed, perforating the strip of fascia with the closing sutures. The kidney is then restored to its place and the two projecting flaps of fascia are attached respectively to the deep and superficial layers of the lumbo-dorsal fascia. Ach has employed this method in ten cases; all gave anatomical cures, nine symptomatic. The tenth case was a hysterical individaul, who was improved, however.

Ach's experience with rectopexy by this method is limited to one case, but the result was satisfactory after nine months, rather a short time to claim a cure. The method is ingenious and worthy of note, for while the principles of plastic operations may be few and fixed, the practice must be adapted to the individual case, as perhaps in no other department of surgery.

A transverse abdominal incision was made, with considerable elevation of the pelvis. Strong traction on the pelvic colon exposed the cul-de-sac. A wide incision was made around the rectum, freeing that organ down close to the sphincter, especially anteriorly. A strip of fascia lata was then taken, eight centimeters wide and twenty-five centimeters long. Of this one end was split to make two flaps which were attached low in the pelvis. One of these flaps was passed almost circularly around the rectum, to which it was attached by numerous sutures. The other flap was passed low down between the bowel and the vagina and sutured by its free border to each organ. In order to avoid adhesions, the upper end was passed upward, external to the peritoneum, which was dissected free, over the right ureter and through the right broad ligament. Drawing it up to lift the

vagina and rectum as far as possible, it was sutured laterally to Cooper's ligament, and its free end was sutured to the muscle of the abdominal wall. The result immediately and after nine months was good, in spite of the condition of the pelvic floor, which had not been operated on otherwise.

Although free fascia transplantation to close a vesico-vaginal fistula was first suggested by Koenig, there appeared no report of its use until the case of Schmid was published.[2] Schmid employed it in the third operation to close a vesico-vaginal fistula, which occurred after a radical operation for carcinoma of the cervix. The two persistent openings were small, close together, and about in the median line, with considerable scar tissue on both sides. After the usual denudation, the bladder mucous membrane was closed transversely. A rectangular piece of fascia lata, three centimeters by two, was then sutured between the bladder and the vaginal mucous membrane, attaching it by four cat-gut sutures under as much tension as possible. The vaginal mucous membrane was then closed as well as possible, making lateral incisions to loosen the tissues. A retention catheter was left in the bladder until the eleventh day. The wounds healed, giving no trouble with bladder or thigh. The method suggests itself as applicable to those cases of small fistula in which the first operation fails, and as the operation of choice, from the first, in all large fistulas.

ESSENTIAL UTERINE BLEEDING.

In spite of numerous studies and reports of many cases, there is as yet no unanimity of opinion among gynecologists as to the so-called "essential uterine bleedings."[3] "Sclerotic changes" in the blood vessels are often referred to as a cause, but these are due to a physiological process and are not to be confounded with true arteriosclerosis. The old view set forth by Ruge and Veit, and accepted for years, was that endometritis is an important cause of uterine bleeding, for the cases were cured by curettage and microscopical examination showed a hyperplastic condition of the endometrium. But the large number of cases which were not relieved by curettage, or in which no hyperplasia was found, or in which no bleeding occurred, even though hyperplasia of the endometrium was present, suggested the probability of the views expressed by Hitschmann and Adler and by others. Recently renewed interest has stimulated a large number of studies of the subject, the results of which have modified the prevailing opinion, so that now the view is that in the great majority of menorrhagias and metrorrhagias endometritis is not an etiological factor.

The hypothesis of a local hemophilia or of a disturbance of relationship between the glands of internal secretion, has no clinical nor anatomical basis. Since normal menstruation is dependent on the presence of the ovary, there arose naturally the theory that disturbances of menstruation were due to disturbances of ovarian function. But no generally accepted basis for this connection has been found. If a series of cases of ovarian tumors is studied and compared with normal cases with reference to the question of bleeding, there is found no anatomical basis for the correlation of bleeding to ovarian changes. In general, as is well known, the hemorrhages occur most frequently about the time of the menopause, when the function of the ovaries is rapidly diminishing. If hypersecretion or hyperfunction of the ovary were the cause of uterine bleedings it is extremely improbable that it would occur about the menopause rather than at the time of greatest sexual activity.

Hirsch claims that while the chief factor in uterine bleeding is defective contraction of the uterine muscle, another important factor is involved. This is a hyperemia which affects not only the uterus but the whole pelvic area. The condition of the uterine musculature which renders its strength inadequate for the blood content of the uterus, that is, insufficient to withstand the blood pressure and drive the blood on through the pelvic circulation to the heart, may be spoken of as uterine insufficiency.

Against this theory of uterine insufficiency is the fact that typical changes in the endometrium or myometrium are not found. But such typical findings are not necessary for proof, for the weakness is not absolute, but relative, there is simply a disproportion. In the presence of a typical anatomical picture there would be no bleeding if no hyperemia occurred. Even in almost complete degeneration of the uterus into connective tissue, as in the senile state, hemorrhages do not necessarily occur. Only slight bleedings occur if hyperemia is absent, as in anemia, chlorosis, general adiposity, chronic intoxication and all wasting diseases.

Hirsch describes normal menstruation as follows: There is hyperemia of the uterus and other pelvic organs due to an ovarian hormone, leading to diapedesis and bleeding. Before it becomes considerable, uterine contractions set in and the bleeding often diminishes or even ceases for hours, the uterine contractions being perceptible to the patient as "drawings" in the abdominal or sacral region. Insufficiency of uterine contraction or of the uterine muscle occurs if there is a maladjustment between the blood content of the uterus and the strength of the uterine musculature. This means simply that hemorrhages are due to functional disturbances of the uterine muscle based in the majority of cases on anatomical changes in the uterine wall. Such changes, however, may be entirely lacking. Uterine insufficiency is thus exactly analogous to uterine atony found in the so-called chronic metritis in which the hemorrhage is due to functional disturbances and not to anatomical impairment. In the case of bleeding from the subinvoluted uterus, we find very well developed musculature, but it is unable to control the

marked overfilling of the puerperal uterus with blood.

In the study of the hemorrhages in virgins, anatomical investigations are not possible, as the patients do not die, or if death does occur, hemophilia cannot be excluded. But even from the hypoplastic uterus hemorrhage does not arise if the general condition of the body is so poor that the usual stimulus at menstruation is insufficient to cause hyperemia. If, however, hyperemia occurs and the uterine muscle is too weak to resist the pressure of blood by contracting, hemorrhage takes place.

Schickele's view that changes in the metabolism of the ovary affect the coagulability of the blood in the uterus, Hirsch does not accept. Therapeutic tests indicate that no such hypothesis is needed, for the usual means of checking hemorrhage are such that in no way can they affect the ovarian metabolism. These measures are in fact only variations in the means of stimulation of uterine contractions.

Among drugs ergot is the most important in producing contractions, and it should be injected directly into the uterine muscle. The effect is astonishing and not exactly comparable to subcutaneous or oral administration. Often one injection is sufficient, the contraction lasting for several hours (2-3-6-7). Occasionally the injection has to be repeated on several days.

The treatment is indicated in nearly all cases of bleeding from uterine insufficiency, and in the past three years Hirsch has employed it in about two hundred cases. There are certain contraindications, as in the case of young girls in whom local treatment is not advisable. In most myomata there is danger of necrosis and infection, but small, interstitial myomata present no contraindication. In all acute inflammatory conditions of the uterus and of the appendages ergot is to be avoided, and especially in malignant disease and in extra-uterine pregnancy. In postpartum atony with hemorrhage the injection into the tissue of the cervix is far safer than packing the uterus or applying the Momberg belt.

The technic is as follows: The portio is exposed and disinfected. It is then grasped with a hook or bullet forceps and an injection is made with a sterile syringe deeply into the muscle of the portio, introducing the needle parallel with the surface of that organ, and using one-fourth, one-half or one gram of ergot preparation. If the injection is made as directed, large uterine vessels are avoided, and thus faintness, nausea and vomiting, which occur if injection into vessels takes place. Following the injection the patient should lie quiet for a while.

CARE OF THE WOUNDS IN THE RADICAL OPERATION FOR CANCER OF THE CERVIX.

The general line of procedure in the radical operation for cancer of the cervix would seem to be for the present fairly well established. The results, however, are not satisfactory for the mortality is high in spite of the marked improvement which has been evident in the more recent reports as familiarity with the operation has increased. A large proportion of the deaths have been due to infection, arising in the pelvic or abdominal wounds and causing fatal peritonitis. Bumm[4] presents the method used in his clinic to obviate this danger. It is worthy of careful consideration on account of its evidently wise provisions and also because of the reduced mortality, which in a series of one hundred cases reached only six per cent. With the exception of the care of the wounds the procedure is the same as that previously employed, and the operability was practically unchanged (65%).

This gratifying result, which Bumm says a few years ago he would have regarded as impossible of attainment for the radical operation, he attributes chiefly to the treatment of the pelvic wound, namely, the complete rejection of the use of drains and the complete closing in of the peritoneal cavity. Infection is sometimes unavoidable, but, by the complete closure of the peritoneum the danger of infecting its cavity is markedly reduced. The objections to drain are well known, the chief one being that they do not drain. Gauze as a pack to check oozing which there is not time to check by sutures, is useful but dangerous.

The important points in Bumm's technic may be noted briefly. Operation on febrile or subfebrile patients is avoided, if possible, but not refused, as the danger of post-operative complication is greatly increased if infection is already present. The carcinoma is curetted and cut away and thoroughly cauterized with the thermo-cautery, which latter process will sometimes considerably reduce the size of the mass, through contraction due to drying out by the heat. The vulva and vagina are disinfected with an alcohol-sublimate solution and the vagina is treated with a 10% solution of silver nitrate until the mucous membrane is of a gray-white color. Finally a gauze tampon wet with the silver nitrate solution is left in the vagina until just before it is cut across from above.

During the abdominal operation protection against infection is careful. The wound surfaces of the abdominal wall are covered with gauze tacked in place by sutures. The high Trendelenburg position is employed, with large gauze compresses to wall off the general cavity, which compresses are not changed until they are removed at the end of the operation. The instruments are frequently boiled, the gloves washed in running water, and finally the escape of carcinomatous material on cutting into the vagina, is prevented by a special clamp.

The thorough vaginal disinfection has perhaps shown its value in eleven cases, in which the carcinoma thinned by curette and cautery was torn into or through, during the abdominal operation, with apparently no bad results. Formerly this accident was regarded as of ominous import.

Of importance equal to the disinfection is the complete hemostasis, with needle and suture, and avoidance of injury of neighboring organs. As a rule the areolar and adipose tissue from the bifurcation of the iliac artery almost to Poupart's ligament and down to the stump of the uterine artery is removed with the glands. Suturing of the iliac artery or vein, if injured, is preferred to ligation, and has been entirely adequate in Bumm's few cases of this accident. The ureter is less frequently injured than formerly and Bumm prefers ligation if it should for any reason be cut across too high for implantation into the bladder.

The treatment of the pelvic wound is, after complete hemostasis, to suture the peritoneum and of bladder and rectum to the vagina. This closes in two large raw areas. Then the raw areas laterally are closed in by running sutures, or, if there is tension by interrupted sutures. Care should be taken to see that no dead spaces are left. There is then run a catgut suture from one infundibulo-pelvic ligament to the other, low down in the pelvis, approximating the peritoneum of the anterior and posterior walls just above the first line of suture. Thus the general cavity is closed off from the vaginal vault.

Bumm mentions numerous other minor but valuable points in the technic, for a description of which the original article must be consulted.

SARCOMA AND THE X-RAY TREATMENT OF MYOMATA.

When the conservative treatment of myomata was introduced, the question of operation on account of fear of sarcoma was raised for the first time. It has of late again come into prominence chiefly through the opponents of the x-ray treatment who have pictured the situation in dark colors. They say that every patient with sarcoma is lost without operation and nearly every patient operated on is saved. But before these dicta can be accepted and before the matter can be decided, several questions have to be answered, according to Miller.[5]

1. Are sarcomata as frequent among myomata as the opponents of the x-ray treatment claim?
2. Are sarcomata so difficult to diagnose?
3. Are practically all sarcoma patients saved by operation?
4. Is it not possible that sarcomata may be healed by x-ray or at least controlled and restrained?

To these questions just such answers as we would wish are not at hand, because the number of cases operated on far exceeds the number of cases treated with the x-ray, and the time of observation for the latter group of cases is too short. But a study of the literature will throw light on some of the points under discussion.

The percentage of frequency of sarcoma in cases of myoma is about two, judging from statistics based on nearly eighteen thousand myoma cases. The results of radical operation in myoma cases show a collective mortality of between four and five per cent., while the results of operation in sarcoma of the uterus show at best not more than 25% of cures.

In regard to diagnosis there is little to be made out in the early stage of the disease, for then differential diagnosis of malignancy is practically impossible. So that on this point the literature may be studied to advantage to see from the histories what cases would have been treated by x-ray and thus the diagnosis have been overlooked. From the cases subjected to this test, there were first excluded all frank cases of sarcoma of the cervix, chorionepithelioma and carcino-sarcoma as they do not come into the group considered, and for the same reason cases under twenty-five years of age. One hundred and eighty cases were found reported in the literature and were considered in some detail. The histories were subjected to the judgment of Professor Koenig who applied the tests now in force at the Freiburg clinic.

Of one hundred and eighty cases, 55, or 30.5% were considered suitable for x-ray, 64.4% not suitable, and in regard to 5% a decision could not be made on account of the defective history. The actual error of diagnosis was found from the various tables which are given to have been 43.2% per cent. Now since sarcoma occurs in about 2% of the myoma cases, the error of diagnosis would be for all cases approximately .8%. This then represents the mortality which could be directly traced to sarcoma developing in myoma cases subjected to x-ray treatment. Recalling then the collective mortality of myoma operations of from 4 to 5%, and the percentage of cures of sarcoma operated on as only 25, it is seen that there is good reason for stating emphatically that the fear of sarcoma should not be a determining factor in deciding between x-ray and operative treatment for myomata. The decision should be made on other grounds.

SUGAR IN THE TREATMENT OF INFECTIONS

The principles underlying the use of sugar in dealing with bacterial infections Kuhn has published previously [6], [7]. They would seem to deserve more attention than they have received. In recent articles[8], [9] Kuhn briefly reviews the essential parts of what he has written before, and applies the principles to gynecology and obstetrics. The acidity of the vaginal secretion is connected with its bactericidal action, for as the acidity is diminished this action decreases. The acidity is due chiefly to the presence of lactic acid, but the anti-bacterial action is due chiefly, not to the lactic acid, but to biological processes, of which lactic acid is an end product. For bacteria produce acid, that is to say cause fermentation, or produce alkali, that is to say, cause putrefaction, according to the kind of food they have. It is the presence of some carbohydrate

substance in the vaginal secretion which makes possible the production of the lactic acid. If sugar, then, is introduced into the vagina, it will increase carbohydrate decomposition, decrease proteid decomposition, as most bacteria show a preference for the carbohydrate, and by its presence change over the pathogenic bacteria, temporarily, at least, into harmless saprophytes. Sugar has also a distinct antiseptic action in strong solutions and rapidly causes bacterial degeneration in weak solutions.

In obstetrical cases, a prophylactic use of sugar solutions might be made, increasing the resistance of the birth canal to infection, by physiological processes. During the puerperium, in any case in which intrauterine douches are indicated, the introduction of a sterilized solution of sugar, 25 to 50% in strength, would perhaps prevent uterine infection. Through osmotic action a free flow of lymph would be set up into the cavity of the uterus; by this the products of bacterial action would be neutralized, and the metabolism of any accessible germs would be so changed that they would no longer produce harmful toxins, but simply cause fermentation. Kuhn does not report results as shown by the treatment of cases, but the basis of treatment is well founded. Clinical results in several conditions are reported by others.

Prager-Heinrich[10] calls attention to the excellent results which have been obtained in the treatment of leucorrhea by means of "xerase," which consists chiefly of sugar and yeast. The treatment with a dry powder has given better results than douches or moist tampons. The cervix is exposed and the vagina is dried as thoroughly as possible. The powder may be introduced by a "powder blower," which is rather time consuming, or by means of a long handled small spoon, or just "shaken in." The powder is kept in place by a tampon. The next day "camomile tea douches" are given, but any mild astringent might be employed. Any form of leucorrhea can be benefited and even acute gonorrheal infection is amenable to a course of these applications. The per cent. of failures (all kinds of cases) as given by Prager-Heinrich is small, 7%.

There is an especially troublesome form of discharge which can be relieved by the use of sugar, namely, that from inoperable cancer of the cervix. Here Berczeller[11] has employed powdered sugar, introduced through a tubular speculum. The vagina is half filled with sugar, which is kept in place by a tampon of iodoform gauze. The treatment may be repeated daily or less frequently as occasion demands up to once a week. The foul odor and the discharge quickly disappear, the bleeding diminishes and the patient's general condition improves.

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THE AMERICAN NEUROLOGICAL ASSOCIATION.

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THE PRESIDENT, DR. PEARCE BAILEY, NEW YORK, IN THE CHAIR.

PRESIDENT'S ADDRESS.

In all organic life there exists two principles for action, viz., desire and fear; desire showing itself as a tendency on the part of the individual to acquire for himself what is beneficial, and fear a tendency to avoid, by whatever means possible, what is harmful. There soon become associated with these two motives, the emotions of pleasure and pain. As evolution proceeds, these two motives become enormously elaborated to form instincts, and through all the instincts, one or both of them can be found. With the development of the intelligence, the instincts become very much checked and modified, so that desire shows a constructive purpose and fear becomes sunk in the unconscious, showing itself chiefly as prudence. Human personality is a combination of the instincts with fear and desire back of them, modified by the checks of the intelligence, but the fundamental motives can always be detected, and man, however much his primal characteristics may be hidden by the teachings of his intelligence, nevertheless remains essentially an egotistic individual. This can be shown by analysis, in his ordinary actions, and becomes very evident under any circumstances which accompany an unhinging, temporary or permanent, of his intellect. Thus, under the stress of violent emotions, of fatigue, of physical disease and especially of mental disease, the teachings of the intelligence are more or less lost sight of, and a man reverts or regresses to earlier types of behavior. Under these circumstances, he shows various phases of the evolutionary stages through which the race has passed.

PRESENT STATUS OF NEOSALVARSAN IN THE TREATMENT OF PARASYPHILIS OF THE NERVOUS SYSTEM.

DR. EDWARD D. FISHER, New York: Since the finding of the spirochetes in the brain and cerebrospinal fluid in general paresis and tabes the term parasyphilis must be discontinued. All diseases of the nervous system due to syphilis are due to the same active agent which is the cause of the pathological changes both in cerebrospinal syphilis and in the more chronic manifestations formerly classed under the head of parasyphilis. The discovery of the spirochetes gives us a rational basis for the use

of neosalvarsan. The question arises: What is the relative efficiency of this remedy in the later manifestations of syphilis of the nervous system, i.e., in tabes and general paresis? In my experience the hopes raised by Prof. Ehrlich's discovery have not been fully realized and can not be. We have only to consider the pathological changes in these diseases to understand the reason why. We have, however, with the Wassermann reaction test a rational plan of treatment in the use of neosalvarsan and mercury with iodides. As we find the Wassermann test negative we can stop our medication and resume it as it becomes again positive. It is certainly rational to remove the active agent of disease, as we can by the use of neosalvarsan, and thus prevent further extension of the disease. In the light of our present knowledge, we are in a position to make an early diagnosis, and the importance of beginning treatment early is emphasized. The importance of being conservative in our claims for this most valuable remedy should be emphasized as it must be many years before we can know whether its early employment, *i.e.*, at the time of the initial lesion, prevents the later manifestations of syphilis of the nervous system.

DISCUSSION.

DR. JOSEPH COLLINS, New York: I find myself accord with Dr. Fisher in regard to the necessity of once now and forevermore dispensing with the terms parasyphilis and metasyphilis. I am not sure that we all recognize a fact which seems to be a fact, namely, that when face to face with tabes and general paresis and what is known under the term of meningeal syphilis, we are not dealing with a nervous disease, but dealing with the disease syphilis. I understood Dr. Fisher to say that the spirochetes are found in the cerebrospinal fluid. I supposed that they had never been found in the cerebrospinal fluid.

DR. PHILIP COOMBS KNAPP, Boston: The clinical and pathological distinction thus far justify the division into ordinary syphilis and parasyphilis and this a convenient distinction which I think might still be held. In regard to the use of neosalvarsan and salvarsan my experience has been that there is a good deal still in Ehrlich's original claim that in syphilis of the nervous system the results are not so likely to be beneficial as in the early stages of syphilis manifesting itself in other organs of the body. Experience both with neosalvarsan and salvarsan in syphilis of the nervous system has not, on the whole, led me to believe that we have gotten so much more than we had in the use of mercury and iodine. In the last two months I have been trying the intraneural method and thus far the benefits of the method seem to be uncertain and possibly not of sufficient value to warrant the increase of danger that accompanies the use of that method.

REPORT OF A CASE OF JUVENILE TABES.

DR. C. EUGENE RIGGS, St. Paul: A boy seven and a half years old, no luetic history in either parent, no symptoms of hereditary syphilis began to have gastric crises when about ten months old; they now occur every three months. Marked ataxic gait, muscular weakness, knee and Achilles jerks absent. Positive Wassermann in blood serum and spinal fluid; no lymphocytosis, no globulin excess.

DISCUSSION.

DR. PHILIP COOMBS KNAPP, Boston: Cases of juvenile tabes are so rare that it seems permissable to speak of a case now in my wards, which, altho not confirmed by autopsy, seems to me probably a case of juvenile tabes. A girl of 16 of whom nothing can be learned in regard to her family history. At the age of five she was run over and her head injured, suffering several scalp wounds and being unconscious for a day. After that there was no trouble at all until the age of eleven, when her sight began to fail. At the age of twelve she had lost vision completely. Someone examining the eyes found optic atrophy of the so-called traumatic origin. There had been a history for one or two years of typical tabetic pains, sharp, shooting pains of brief duration. On examination there was some perception of light and well-marked primary atrophy of both disks, no indications of any keratitis, no radiating scars about the lips. The two central upper incisors were peculiar in that they were somewhat broad, but not characteristic of Hutchinson's. The knee jerks were absent on one side, obtained only by reinforcement on the other. There is marked Wassermann in the blood and the cerebrospinal fluid and globulin reaction, but no increased lymphocytosis.

DR. H. M. THOMAS, Baltimore. A boy of seven was sent to the surgical department of Johns Hopkins with the diagnosis of tumor, probably of the cerebellum. I was asked to see him in consultation. The child had been extremely bright up to the fifth year, when he had begun to deteriorate, and then it was thought that he had an injury. His deterioration took the form of being unable to speak as well as he had before; he had been loquacious; he became noisy and fretful and hard to manage and his walk became so unsteady that he could hardly get about. On examination he showed no sign of hereditary syphilis. He had no choked disk, his walk was distinctly cerebellar, his pupils were distinctly unequal; they did not react to light and his reflexes were exaggerated. The boy's blood gave the positive Wassermann reaction, and the diagnosis of cerebral syphilis was made. He was given two doses of neosalvarsan and changed markedly. He became quieter, his walk became steadier and he left the hospital having done pretty well. However, on getting home he became extremely quiet and in a week he was brought back in an absolutely different condition. At that time he was speechless, his walk was perhaps a little less ataxic, still he made no attempt to walk. The physical signs were the same. We did a lumbar puncture. He had a cell count of 33, positive globulin and positive Wassermann and a Wassermann in his serum was also positive. The case then seemed to be one of juvenile general paresis, and, as it was the only case, we did not venture to make that diagnosis, yet we have been extremely interested.

TWO CASES OF REMOVAL OF EXTRA-DURAL TUMOR OF THE SPINAL CORD.

DR. PHILIP COOMBS KNAPP, Boston: Tumors of the spinal cord are rare. In 3617 autopsies at the Boston City Hospital a tumor was found only four times, but the spinal cord was not always spared.

In 1294 patients in the neurological service a tumor was diagnosticated 10 times. In 11 cases operation has been performed in six cases with fatal results, in four with some improvement, so that the patient could get about on crutches, and in the fifth with marked improvement followed by a return of symptoms and a second operation. Two of these cases were reported:—

CASE 1. Woman, 40, married, nullipara. Menopause at 37. Considerable alcohol. Entered hospital May 20, 1912. For six months or more had had pain between the shoulders, shooting into arms and worse on motion. For three or four months the pain had been growing worse; for six weeks the legs had been numb and for two weeks paretic. Micturition was difficult, and the urine at times had to be drawn. Sexual desire unimpaired. Some rigidity of dorsal spine. Legs paretic and spastic. Knee jerks exaggerated, double Babinski. Sensibility diminished from level of ensiform cartilage downward. Unable to pass urine, which contained a trace of albumen and some pus. Wassermann and Noguchi in blood, positive. The cerebrospinal fluid was clear, 20 lymphocytes to a cubic millimetre; globulin reaction absent. Wassermann and Noguchi negative. Somewhat vague shadow in upper dorsal region. The paresis increased to complete paralysis, the spasticity was much greater. Salvarsan and mercury did not benefit her. July 30 laminectomy by Dr. E. H. Nichols. Two small masses were removed from external posterior surface of dura at level of sixth dorsal spine. Made a good surgical recovery. She gradually improved, regaining control of her bladder, being able to stand alone and walk with crutches, and having normal sensibility. She was still somewhat spastic and had exaggerated reflexes. She is still on crutches and in the hospital for chronic diseases.

CASE 2. Woman, 33, married, four children. Entered hospital July 30, 1912. Three years before, in the sixth month of her fourth pregnancy, began to have pain in right loin, buttock and leg. After delivery legs grew weak. Pain subsequently appeared in left leg. Loss of sexual desire, micturition and defecation imperative, occasionally incontinence. Gradual increase in weakness of legs. When first seen was unable to stand or walk without support. Sensation diminished below a line two inches below umbilicus. Tender over lower dorsal vertebrae. Some spasticity. Wassermann and Noguchi negative. Lymphocytes 20 to a cubic millimeter. Laminectomy August 16, by Dr. J. A. Hubbard. Small growth, apparently fatty, removed from posterior external surface of dura at level of eleventh dorsal spine. Dura opened, arachnoid bulged, no pulsation. Considerable fluid drained from arachnoid. Some fever and bedsore, but otherwise she made a good surgical recovery. Gradual recovery of motion and sensation. Able to stand and take a few steps on Sept. 7. Toward the end of October walked without crutches, and later improved so that she could walk half a mile, dance, and travel in the trolley cars alone. Early in January, 1913, she took cold, and her symptoms gradually returned, so that early in February she returned to the hospital in much the same condition as in the previous July, but the hyperesthesia extended to two inches above the umbilicus. There was a good deal of pain in the back and the legs were weak and spastic. March 15 the wound was re-opened by Dr. Hubbard, and the spinous process above was removed. No adhesions were found, but the cord was tense and did not pulsate. The dura was opened and much cerebro-spinal fluid escaped. She made a good recovery and was discharged April 21. There was then a very slight hyperesthesia with some allocheiria in the right leg. The right leg was somewhat hypertonic, but she had good strength in both legs and could walk with crutches or with very slight support. The operations that had been done in Boston, 14 of which had been already reported, had been collected, and showed the following results: Tumor removed 8, 6 improved, 2 died; tumor partly removed 7, 3 improved, 4 died; tumor found, not removed 4, 2 improved, 2 died; lesion found, not tumor 6, 3 improved, 3 died; nothing found 6, 3 improved, 2 died, 1 result uncertain. Shersburg collected 119 operations; of these 49 were benefited, 42 died.

A PECULIAR AND UNDESCRIBED DISEASE OF THE NERVES OF THE CAUDA EQUINA.

DRS. FOSTER KENNEDY AND CHARLES A. ELSBERG, New York: During the last five years, in a large number of spinal operations, 84 of which were performed by one of the writers, they have met with five cases alike in their histories, their clinical findings, and in the peculiar swelling and discoloration of the roots of the cauda equina, that they have been led to class them together in the belief that they form a definite clinical and pathological entity. Pain was present in the back of the thighs and legs in all of the patients; atrophy of the anterior muscles with loss of the power of dorsal flexion of the foot was present in 4; the objective sensory changes consisted of loss in the sacral and lowest lumbar nerves. The disorganization of the functions of the bladder and rectum was complete in four patients. The abdominal reflexes were regularly present, while the ankle jerks were lost in four; the knee jerks became lost coincident with the upward progress of the disease. The conditions found at operation were mainly a swelling and reddish-blue discoloration of many or all of the roots of the cauda equina. A thorough search of the literature failed to reveal any proven case like those described. A few cases have been reported in which a clinical diagnosis of neuritis of the cauda equina was made and the condition believed to be syphilitic, but in none of these was the diagnosis verified by operation or autopsy. A very similar disease has been described in the horse, and in these animals the postmortem examination revealed a condition very like that found in the patients operated upon and reported in the paper. The Wassermann test both in the blood and cerebrospinal fluid was negative in all of the cases, therefore the condition is not luetic; nor were there any signs of a meningeal lesion.

GIANT TUMORS OF THE CONUS AND CAUDA EQUINA.

DRS. JOSEPH COLLINS AND CHARLES A. ELSBERG, New York: The patient begins to complain of pain and stiffness in the back, extending down the posterior aspect of one and then of the other thigh. The pain is intermittent at first, later it is continuous. After the expiration of one year or more, the symptoms become worse, one or double drop foot appear, the lower limbs become weaker and stiffer, knee and ankle jerks disappear. Then follow difficulties in the functions of the bladder and rectum,

irregular sensory loss, rigidity of the lumbar vertebral column, tenderness of the lumbar spine. Peroneal palsies are regularly found with electrical changes. The patients are often suspected of tabes, and have usually been treated for long periods for sciatica. The important features of the clinical histories were the following. A history of one or more years' duration; pain in the small of the back, sooner or later extending down one and then the other extremity; stiffness of the back in the lumbar region; increasing weakness and stiffness of the lower extremities, with loss of power of dorsal flexion of the foot; slight disturbances of the bladder and rectum. The important features of the clinical examination were the following: Rigidity of the lumbar vertebral column; weakness and stiffness of the lower limbs; paralysis of the peroneal groups of muscles and sometimes of the tibialis anticus group; dropped foot on one or both sides; absence of knee and ankle jerks; tenderness of the lower lumbar spines; irregular and unsymmetrical sensory disturbances; lumbar puncture usually negative, no fluid obtained, Wassermann test and x-ray negative. The typical findings at operation consisted of a large reddish-brown, not vascular, tumor within the dura, which filled up the entire lower part of the spinal canal, surrounded the roots of the cauda equina and extended upward on the conus, with which it was not closely connected. The growth is not intimately connected with the inner surface of the dura, and can be easily freed, from after which the inner surface of the dura is found to be smooth and glistening. The growths are well encapsulated above, but are closely connected with the nerve roots below. The peculiar features of the tumors are: their large size; the late appearance of bladder and rectal disturbances; the relatively small amount of sensory loss in spite of the fact that the tumors fill up the entire lower part of the spinal canal; the benign course of the disease, without tendency to perforate the dura. Operative interference should be done in two stages by the "extrusion" method. If the cases are recognized early, radical removal of the growths should be possible.

The above three papers were discussed jointly.

Dr. Archibald Church, Chicago: I am reminded by Dr. Knapp's paper of an experience of comparatively recent date, which, while it might not be edifying, might be interesting; that was, the recurrence of three tumors followed by three successful operations on the same patient. The first tumor made its appearance four years ago. At the end of a year the patient was entirely paraplegic. Dr. Patrick saw the case in consultation. Dr. Murphy operated. A tumor was removed from the cervical region. She made an uneventful recovery and in the course of six months recovered. At the end of two years she began to have the same symptoms of spinal tumor and within six months had developed the same symptoms. A second operation found another growth in connection with the pia about an inch lower than the first tumor. Whether this was a recurrence of the first growth was not known. It was supposed to be essentially an independent neoplasm. For nine months she had comparative freedom. Two weeks ago she came back to Chicago for recurrence. Early last week a third operation was done and a third tumor removed. So there was one on the right, one on the front and one on the left. I have had two cases of cauda equina. Some eight years ago a surgical friend had the typical manifestations of caudal lesion. This endotheliomatous growth filled the entire neural cavity and was supposed to be so intimately related to the cord that no attempt was made to remove it. The man perished from kidney trouble. About three years ago I saw a young boy with terrible pains in the legs who had been treated as hysteria. After many months of observation he showed a little area of sensory loss corresponding to the cauda and upon this comparatively slight symptom, although the bladder was not materially affected, an operation was done and an infiltrating endotheliomatous neoplasm extending from the middle of the lumbar spine to the lower end of the sacral canal was uncovered. It was not thought feasible to remove it and safest to let the case take its course. The operation wound has remained perfectly solid. The symptoms have not increased, but a tremendous growth has invaded the abdomen so that he looks like a six-months' pregnancy. Apparently the pressure has been relieved from the caudal region so that further neural symptoms are inhibited and the growth has gone in the anterior direction. This large caudal involvement may be more frequent than we suppose.

Dr. W. M. Leszynsky, New York: In regard to the difficulty of diagnosis in tumors of the cauda equina and inflammation of the roots, the mere fact that one can obtain no cerebrospinal fluid should lead one to make the differential diagnosis between the two conditions.

Dr. William G. Spiller, Philadelphia: This subject of the root neuritis confined to the lower portion of the cord is one of great interest. One can't help wondering whether in this case there was a meningitis of a certain degree, possibly of a considerable degree, and whether the root changes were not part of this meningitis. Dr. Elsberg said that the cord showed nothing by the naked eye. There may be marked meningitis which is not to be detected by the naked eye at all. Tumors vary very greatly as to whether they are in the upper part of the cord or in the lower. In the upper they are more of the type of fibroma and endothelioma, well defined tumors that may be readily removed in most cases. In the lower part of the cord they are very much more malignant, infiltrating, liable to be of greater size and offering much more unfavorable conditions for removal. In one case of inoperable tumor I got Dr. Martin to cut the antero-lateral columns to remove the pain. It was very successful. The patient lived two years after that operation. He died a few months ago, with an enormous tumor filling a large part of the abdomen.

Dr. Joseph Collins, New York: It seems useless, so far as the patient's restoration to a degree of health and usefulness is concerned, to operate on these caudal tumors as they are now being operated upon, my experience being that it does not give them any considerable degree of life and does not restore them to any degree of health. The significance of this fact is that we must diagnosticate these cases earlier than we do now. If we rely upon the presence or absence of the cerebrospinal fluid in a case that has the symptoms of caudal tumor in making the differential diagnosis, we will go wrong very frequently. I would make a plea for operation on caudal tumors in every instance at the time when suspicion enters our mind that these are present, and, second, for operation in tumors of the conus five, six, eight, ten years before the time they are now operated on.

A CONTRIBUTION TO THE PATHOLOGY OF MYASTHENIA GRAVIS.

DR. SIDNEY KUH AND DR. MORRIS BRAUDE, Chicago: Ours was a typical case of myasthenia gravis in a physician fifty years of age, of a duration of about five years. Examination of nervous system was made with the Weigert myelin sheath stain and Pal's modification of the same, Mallory's chloride of iron hematoxylin, Ford-Robertson's toluidin blue, thionin, Nissl's methylene blue, toluidin blue counterstained with erythrosin, uranium carmin, Van Gieson's stain, Weigert's fibrin stain and the same author's stain for elastic fibres were used on about 400 sections. Small areas of vascular sclerosis, recent (agonal?) hemorrhages, increase in glia tissue, corpora amylacea were found in the spinal cord. In the cervical region there was an aberrant bundle of fibres. In the higher levels of the cord capillary polymorphonuclear thrombi and chromatolysic and pigmentary changes were seen in the nerve cells. The relative intensity of these latter findings remained approximately constant, *i.e.* where the thrombi were numerous the changes in the nerve cells were greater. The same applied to medulla and corpora quadrigemina. In the cortex there was but little of these changes to be seen; more in the optic thalami. The muscles showed nothing that had not previously been described. There was no trace of the thymus found.

BILATERAL OCULOMOTORIOUS PALSY FROM SOFTENING IN EACH OCULOMOTORIUS NUCLEUS.

DR. WILLIAM G. SPILLER, Philadelphia: Bilateral oculomotorius palsy developing in an apoplectic attack, syphilitic in origin, implicating every muscle supplied by the oculomotorius in each eye, resulting from bilateral softening as two separate lesions confined to the nuclei of these nerves; without implication of other cranial nerves except the opticus, and without other symptoms except preceding mental disturbance, convulsions and some change in the patellar reflexes and succeeding extension of each big toe from plantar irritation are the chief features in the case reported in this paper. The author discusses the several symptom-complexes resulting from vascular occlusions he has studied, viz. the occlusions of the posterior inferior cerebellar artery, of the uppermost portion of the anterior spinal and adjoining portion of the vertebral arteries, of the cervical anterior median spinal artery, of the vessels supplying the inner segment of each lenticular nucleus, and (in the case reported in this paper) of occlusion of the vessels to the oculomotorious nuclei. In the last mentioned condition there are symmetrical softening and paralysis of all branches of the oculomotorius, although the paralysis may not be complete in all the muscles enervated by the nerve; there are also involuntary incoördinate movements and great rigidity with unconsciousness at the onset of the attack.

THE PERIMETRIC DEVIATIONS ACCOMPANYING PITUITARY LESIONS.

DR. HARVEY CUSHING, Boston: In a series of 104 examples of pituitary diseases, the greater number accompanied by manifestations of tumor, due either to an enlargement of the hypophysis itself or to a superimposed lesion, changes in the fields of vision have been present in a large proportion of the cases.

Few physicians at the present time venture to make a diagnosis of an hypophysial lesion in the absence of a bitemporal hemianopsia; and it has been our experience that the majority of the neurologists and ophthalmologists through whose hands these patients have passed, have hesitated to make such a diagnosis—although there were obvious deviations from the normal in the perimetric outlines—for the reason that these deviations did not show the characteristic bitemporal defect with a more or less definitely vertical meridian separating blind from seeing fields.

As a matter of fact, in a considerable number of these cases the field defect has been an homonymous one, for when the enlarging gland bursts through its dural capsule it may extend into the interpeduncular space to one side of the chiasm rather than in a median posterior position.

The opportunity has been given in this series of cases, not only in many instances to follow the progressive changes in the visual fields as the defect advances, but also to follow the steps by which the normal peripheries become restored after a transphenoidal operation, when partial removal of the growth has afforded relief from pressure. These experiences have shown that in the majority of instances the defect advances in very characteristic fashion, usually beginning in the upper and outer temporal field and affecting color vision before vision for form.

These minor changes are as typical of a retrochiasmal lesion as is the full-blown text-book picture of complete bitemporal hemianopsia. Furthermore, the defect rarely advances with equal steps in the two eyes, and consequently for each individual eye it proves to be a matter of clinical convenience to divide the advancing process into stages, as follows:

Stage 1 shows merely a notch, often quadrantal, in the upper temporal field for color, though there may be in addition some slanting off of the form field. This is due to the fact that the ventral crossed fasciculus is affected by the pressure at an earlier stage than is the dorsal crossed fasciculus, the transmission of color impulses suffering earlier than the transmission of form impulses.

Stage 2. In this stage a beginning quadrantal constriction in the form field follows upon the quadrantal defect for colors.

Stage 3. Here color vision is more or less completely lost in the entire temporal field, the form constriction remaining practically quadrantal, with beginning encroachment upon the lower temporal field.

Stage 4. In this stage hemianopsia is complete for form and colors, the macula still being spared by the otherwise practically vertical meridian.

Stage 5. Hemianopsia remains complete for form and color, the macula now being included in the vertical meridian, there being in this stage often an actual complete macular blindness for colors.

Stage 6. Macular vision is lost for form as well as colors and the nasal field begins to shrink from the vertical meridian.

Stage 7. Color vision is entirely lost and a patch of vision for large objects remains, usually in the lower nasal quadrant.

Stage 8. Blindness.

The least affected eye progresses in the meantime along the same route; for it cannot be emphasized too strongly that the process rarely advances with equal steps in the two eyes. Indeed, commonly

enough, one eye may be completely blind, whereas the other may show a condition in Stage 1, or indeed with no observable change whatsoever.

Even after Stage 8, with blindness, has been reached some vision may be regained by operative measures; which goes to show that the disturbance is brought about, not only by an anatomical destruction of the fibres through a process of degeneration, but also by a physiological block to the transmission of impulses superimposed on the actual atrophic changes.

Though the prospect of a return of vision, therefore, is not utterly hopeless, even when blindness has supervened, it is, nevertheless, of great importance for us to recognize these evidences of chiasmal pressure in their early stages.

Pituitary disease, as I must continue to emphasize, is a common malady, heretofore largely overlooked. One serious complication of the disorder is a so-called primary optic atrophy; and this is in many respects the most obvious of the neighborhood symptoms and one for which surgical measures are as definitely indicated as when dyspnea is produced by pressure against the trachea in cases of goitrous enlargement of the thyroid gland.

(To be continued.)

Book Reviews.

Therapy at the Bonn Univeristy Clinics. Edited by PROF. DR. RUDOLF FINKELNBURG. Bonn: A. Marcus and E. Weber. 1914.

This German volume presents a purely practical therapeutic compendium from the medical, psychiatric, neurologic, surgical, ophthalmic, otologic, rhinologic, gynecologic, and dermatologic clinics at Bonn. The attempt is made by the editor to coördinate the methods of the various departments on the basis of etiologic treatment. Emphasis is also laid on negative therapeutic results and on special technic. Each section is by the chief of the respective clinic. Much of interest will be found by students and practitioners in every division of this book, which represents the cumulated experience of years in the professional life of leaders in the several departments of medicine.

The Principles and Practice of Medical Hydrology. By R. FORTESCUE FOX, M.D. (Lond.); F. R. Met. Soc. London: Hodder and Stoughton and Henry Frowde. University of London Press. 1913.

In the sub-title of this book, medical hydrology is defined as "the science of treatment by waters and baths." It is the work of a recognized English expert, issued in the series of London Medical Publications. The author aims "to discuss the various actions of water and baths on the body, without more detail than may enable medical men to apply for themselves these methods of treatment. The first section of the book describes the physiology of bathing, with a note on children's baths and school baths. The second section considers hydrotherapy, with a note on hydrotherapeutic institutions. The third deals with medicinal springs and baths, and the fourth with indications for hydrologic treatment. The volume is an interesting and convenient manual for those concerned with this important but often neglected department of therapeusis.

Medical and Sanitary Inspection of Schools. By S. W. NEWMAYER, A.B., M.D. Illustrated with 71 Engravings and 14 full-page plates. Philadelphia and New York: Lea and Febiger. 1913.

This volume, by the chief of the division of child hygiene of the Philadelphia Bureau of Health, is intended as a guide "for the health officer, the physician, the nurse, and the teacher" in the physical examination of school children. There are also chapters on the sanitation of school buildings and on methods of preventing epidemics of contagion in schools. The introduction describes the development of medical inspection of schools in the United States, a procedure first established in Germany, tentatively introduced in Boston a score of years ago, and now recognized universally as a measure of undisputed importance for the present and future public welfare. This work on the subject should prove an excellent practical manual for all concerned with the hygienic and sanitary administration of schools.

Text-Book of Anatomy and Physiology for Nurses. By AMY E. POPE. With 135 illustrations. New York and London: G. P. Putnam's Sons. The Knickerbocker Press. 1913.

"The object of this work is to provide a textbook containing more physiology than the books on anatomy and physiology hitherto provided for nurses." It is unfortunately true that physiology often gets scant attention or is altogether neglected in the instruction of nurses in training-schools, yet it is really more important than detailed knowledge of form. Interest in structure should not be allowed to overweigh interest in function; for the product is really the object of ultimate importance, not the machine. Hence the author's purpose in this book is especially laudable, and she has fulfilled it exceptionally well. The text is clearly written and well arranged, the illustrations are abundant and helpful, a number of them being in colors. There is an extensive and serviceable glossary, and a useful appended table of food values compiled by Miss Alice C. Keith. The book should find immediate recognition and prove a great aid to pupil nurses and to their teachers.

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MEDICAL LEGISLATION. THE PRACTICE OF DENTISTRY IN MASSACHUSETTS.

THE importance of medical legislation and of legislative measures affecting not only the public health but the practice of medicine, can hardly be overestimated in any community. Naturally such legislation, to be sound and equitable, should rest fundamentally on enlightened professional opinion. Unfortunately this opinion is often imperfectly formed, vague, or based on inadequate information. To crystallize the professional judgment of physicians on topics of legislative concern not only should be of advantage to them, but should be a definite aid to legislators desirous to further the public welfare by acting on the concerted counsel and opinion of medical men.

During the early part of the year, therefore, the JOURNAL will, as heretofore, devote especial editorial attention not only to legislative measures pending before the General Court, but to the discussion of desirable measures not yet shaped into actual form. It will aim in every case to state the facts clearly and impartially, to indicate the opinion of experts on the subject in hand, and to point out the probable effects, advantageous and disadvantageous, of the passage of the law or bill under consideration.

Of the measures early to come before the present session of the legislature, one of the most important is that affecting the practice of dentistry in Massachusetts. This measure was before the General Court in 1913, and was defeated by the opposition of those who did not approve the opportunity which the bill afforded for the employment of dental assistants to clean teeth, when such assistants were not themselves trained dentists. The present bill has been revised in such a way as apparently to make such employment free from any possibility of abuse, and at the same time productive of much good to the community. Its provisions are in substance as follows:—

"Section 1. There shall be a Board of Dental Examiners consisting of five persons, each of whom shall be a legal resident of this Commonwealth, a reputable dentist and a graduate of a reputable dental college, with an actual practice in dentistry in this Commonwealth for the five years next preceding his appointment. Said board shall examine candidates for registration in dentistry. The present members of the Board of Registration in Dentistry shall constitute this board and shall serve out the respective terms for which they have been appointed. No member of the board shall be a member of the faculty or board of trustees of any institution engaged in educating dentists.

"The governor, with the advice and consent of the council, shall have power to remove from office any member of said board for continual neglect of duty required by this act, or for incompetency or dishonorable conduct.

"Said board shall have full power to make and shall publish necessary rules and regulations for the proper fulfilment of its duties under this act. It shall choose one of its members chairman and one secretary and shall hold at least two regular meetings each year in Boston. A majority of the board shall constitute a quorum for the transaction of business. Said board shall keep a full record of its proceedings and a full registry of all persons certified as denists by said board, which shall be public records and open to inspection.

"A transcript of any of the entries in such record, certified by the secretary, shall be competent evidence of the facts therein stated. The board shall have the power to summon witnesses and to administer oaths and hear testimony in all matters pertaining to the duties imposed upon it by law. On or before the first day of January in each year, said board shall render to the Governor a full and accurate account of its proceedings, receipts and disbursements during the year immediately preceding."

The remainder of this section specifies the salaries, fees, time and place of meeting of members of the board.

"Section 2. After the passage of this act, any person over twenty-one years of age and of good moral character, who is a graduate of an accredited high school or presents proof of equivalent training and has received a diploma from the faculty of a reputable dental college,

as defined in this act, shall upon fulfilment of requirements for applicants as hereinafter specified, be entitled to examination by the Board of Dental Examiners. If found competent, he shall be registered by said board and shall receive a certificate of such registration signed by the secretary of the board, which shall be prima facie evidence of the right of the holder to practice dentistry in this Commonwealth. In proof of this right the certificate or a duplicate shall be kept in his office and shall be shown to any member or agent of the board on application.

A dental college shall be considered reputable which possesses the following qualifications:

"First: It shall be chartered and authorized by its charter to confer degrees of doctor of dental medicine or doctor of dental surgery.

"Second: It shall deliver a full course of lectures and instruction by a competent faculty and corps of instructors, said course to consist of not less than three separate academic years of not less than thirty-two weeks each of six days for each week, and shall require each matriculate to be a graduate of an accredited high school or to present proof of equivalent training."

The remainder of this section describes the details of application for examination:

"Section 3. No person not a registered dentist shall directly or indirectly practice dentistry in the Commonwealth of Massachusetts, except as provided in this act.

"It shall be unlawful for any person or persons to operate any dental office under any name or corporation name other than the name of the person or persons therein actually engaged in the practice of dentistry.

"Any person shall be said to be practicing dentistry within the meaning of this act who shall use the word or letters 'dentist,' 'D. M. D.', 'D. D. S.,' or any other letter or title in connection with his name, which in any way represents him as engaged in the practice of dentistry, or who shall for a fee, salary or other reward paid or to be paid, either to himself or to any other person, perform dental operations of any kind, diagnose or treat diseases or lesions of the human teeth or jaws, replace lost teeth by artificial ones, or attempt to correct or diagnose malposition thereof, or who shall advertise or permit it to be done by sign, card, circular, hand bill, newspaper or otherwise, that he will perform any or all of the aforesaid operations.

"But nothing in this act shall prevent any person from cleaning teeth under the direction of a registered dentist. The cleaning of teeth shall include only the removal of all stains and deposits from the exposed surfaces of the teeth and polishing said surfaces. Nothing in this act shall apply to treatment by a registered physician not practicing dentistry as a specialty, nor prevent a registered dentist of another state or his assistant from operating at a public clinic under the auspices of a duly organized and reputable dental college or association, nor prevent a student of a reputable dental college, incorporated under the laws of this Commonwealth, from performing operations as part of the regular college course.

"A registered dentist shall have the same right to prescribe or buy drugs or medicine for use in the conduct of his practice as the registered physician of this Commonwealth."

It will be seen that the object of previous contention lies in this third section of the bill, which makes it possible for an assistant or nurse, not a dentist, to be employed in "cleaning teeth under the direction of a registered dentist." This provision is intended especially for the benefit of the public in school dental clinics, where the cleaning of teeth is a large part of the work to be done and is an agent of great prophylactic value in anticipating dental caries. Obviously it is impossible that this should all be done by dentists. It must, therefore, either be left undone, or must be done by such competent assistants as those for which this act makes express provision. The possibility of violation of the spirit of the law seems obviated by its restrictions:

"Section 4. The Board of Dental Examiners, after giving due notice and hearing, may revoke or suspend the certificate of any dentist:

"First: For felony or misdemeanor involving moral turpitude, in which case a record of conviction or finding of guilt or a certified copy thereof, certified by the clerk of the court or the judge in whose court the conviction or finding of guilt is had, shall be conclusive evidence.

"Second: For gross ignorance or inefficiency in his profession or for obtaining a certificate of registration or any fee, by fraud or misrepresentation, or for the advertisement of dental practice, treatment or devices in which untruthful or improper statements are made, or for habitual intemperance or gross immorality, or for wilful violation of the provisions of this act.

"Said board by a majority vote may reissue a revoked certificate after one year from date of revocation.

"A dentist aggrieved by the action of the board in the revocation or suspension of his certificate, may apply to the Supreme Judicial Court in the county in which he resides, or in the County of Suffolk, for a writ of mandamus requiring them to revoke their decision if the same is found on hearing to have been erroneous."

Sections 5, 6, and 7 respectively provide the penalty for unregistered practice, repeal pre-

vious conflicting legislation, and fix the date at which the act shall take effect.

This measure, as it now stands, is approved by a majority of members of the Massachusetts Dental Society and, from a socio-political standpoint, by the Massachusetts Civic League. The latter organization has stated the following as some of the reasons why it advocates the passage of this bill:

"1. The Massachusetts dental law is behind those in most of the states. Other New England states have modern laws enacted in recent years. The aim of the proposed law is to bring Massachusetts up to date.

"2. This law will get under many of our difficulties. From ninety to ninety-eight per cent. of our school children have dental defects. Eighty per cent. of these defects could be prevented by proper cleaning of the teeth. Under the Massachusetts law no one but a registered dentist may clean teeth. There are not enough dentists to handle the school children alone. Cleaning teeth is a simple matter. The proposed law provides that it may be done by anyone under the supervision of a dentist, and that a dentist who abuses his privileges shall have his certificate taken from him. In short, under the new law we can prevent an enormous amount of dental decay and other defects.

"3. Bad teeth have an important part in the break-down of physical and nervous conditions. They are also directly responsible for the spread of contagious diseases. Cases are known where decayed teeth have carried disease germs for many months after the patient recovered, others catching the disease. Decayed teeth offer one of the best breeding grounds for germs.

"4. There is some tendency to the belief that this is not a social problem. To all who believe that it is better to take care of broken-down individuals there is perhaps no answer. To those who believe that it is the function of society to keep people on their feet there seems to be a good case to present. It is because of the constructive elements in the proposition that the Massachusetts Civic League has taken it up."

These reasons seem cogent.

The opponents of the proposed measure object to its provision for dental assistants on the ground that the latter may usurp the functions of dentists and interfere with the work of legitimate practitioners. It does not seem that with the careful restrictions now imposed by the revised measure this objection is any longer valid.

The present bill has been carefully drafted by a body of dentists after conference with all persons and parties concerned. We feel that it is a desirable and progressive piece of legislation, and recommend its passage into law.

THE MENTALLY DEFECTIVE IMMIGRANT VIEWED FROM A SOCIOLOGICAL STANDPOINT.

IN a recent number of *The American Magazine*, Arnold L. Gesell, now a teacher in Yale University, presents us with a eugenic study of "The Village of a Thousand Souls." The village contains 220 families and may be accepted as typical. In the course of his very interesting and illuminating article Professor Gesell states:

"We can appraise and classify the families of our Village of a Thousand Souls with reference to certain large characteristics. We can do this to some success without the assistance of a psychological laboratory because, after all, life itself is the most comprehensive test and the token of the character of these villagers. The school, the street, the places of work and business, the yards, the gardens and the playgrounds have been the public stage upon which the lives of the inhabitants of The Village of a Thousand Souls have been manifested."

In discussing the definition of feeble-mindedness Professor Gesell approaches the subject from the medical, pedagogical, psychological and sociological standpoints. From the medical standpoint feeble-mindedness may be said to be a permanent arrest of development of the nervous system, especially of the brain cortex. From the pedagogical viewpoint a feeble-minded person is one who cannot be taught to read, write or cipher, with any marked advantage to himself or to society. Psychologically, feeble-mindedness means that there is a condition of "permanent, incurable mental retardation limiting the individual to an intelligence less than that of a normal thirteen-year-old child." Viewed from the sociological aspect, Professor Gesell states that feeble-mindedness is a condition of relative mental incompetence, dating from birth or infancy, which makes it impossible for the individual to get along in the world on equal terms with his normal fellows. And it is this last definition which Professor Gesell found most useful for his eugenic survey of "The Village of a Thousand Souls."

A recent article by Dr. Bernard Glueck, of the United States Public Health Service at Ellis Island, deals with the problem of the mentally defective immigrant from the sociological standpoint. He has given us an original, sane paper which is well worth careful reading by all those who are interested not only in the immigrant but in the mentally defective in general.

After first reminding us that what we regard as the normal mind is but "the usual, the common, the everyday mind as we encounter it determining the usual, the common, the everyday conduct and behavior," and after calling our attention to the wide range of normality with its infinite possibilities for variations, Dr. Glueck next considers the definition of feeble-mindedness. He chooses the definition adopted by the British Commission for the Study of the Feeble-Minded. According to this definition the feeble-minded are individuals who on account of incomplete cerebral development are unable to perform their duties as members of society in the position of life to which they were born. This, it will be seen, is a social definition. It takes into account the native qualities and capabilities of the individual, his age, education, opportunities, race, etc. It considers the individual as a biological unit, as a member of the society or the community in which he will take his place.

The various measuring scales of intelligence, such as the Binet-Simon scale and the American modification by Goddard, although of the greatest usefulness in detecting feeble-mindedness, depend upon the comparison of the examined individual's intelligence with a given standard of average normal intelligence, for a certain race, under certain conditions. It gives us an artificial classification of feeble-mindedness, which can only serve to augment but cannot entirely replace the social one. This applies especially to the adult, and more particularly to the immigrant, in whom, in order to arrive at a rational conclusion with respect to the feeble-mindedness of an individual, as judged by the measuring scales, we must first have a definite idea of the average standard with which the results to be obtained are to be compared. It is necessary to know his past life history, his degree of adaptability in life as judged by his past performances, his daily conduct, his ability to earn a living and to lead a normal, law-abiding life. We must know whether he was able to look after himself and whether the normal instincts of man were properly controlled and directed.

In studying the defective immigrant from this standpoint Dr. Glueck endeavored to gain a correct idea of the average normal intelligence of a given race and for this purpose he selected at random fifty individuals of the Polish race, ranging from 18 to 40 years of age, whose outward appearance suggested nothing abnormal, who had never attended school and did not know how to read or write. The tests employed were chiefly performance tests, the element of language being thus eliminated to as great an extent as possible. For the series of tests employed reference should be made to the original article. Dr. Glueck's conclusion is worthy of quoting verbatim: "Here we have fifty individuals who were as near alike in most respects as is possible among human beings. Under circumstances which were as nearly alike as possible, these individuals were given the same thirty-eight problems for solution, and the results of correct answers varied all the way from eighteen to the full thirty-eight."

The lesson is plain: The measuring scales have, up to the present, consisted in an examination of the knowledge or intellect of the individual. We have too often lost sight of the fact that man is a feeling, living, active being, with emotions and instincts. The biologic and sociologic approach to the study of the mind of man is the only rational method of approach. It is fundamental and basic. The psychologic tests cannot entirely replace but must be considered in connection with the life-history of the individual. We believe, with Dr. Glueck, that it is possible to evolve a set of questions which would represent, as nearly as possible, what the average immigrant of a given race should be able to accomplish mentally, if he is to be considered normal.

NATIONAL INSURANCE IN GERMANY.

THE first of January marks the culmination of an important struggle in Germany between the medical profession and the insurance societies through which the national sick and benefit insurance is administered. The grievance of the German doctors, as of the British, is that they are not adequately recompensed for panel work, and that free choice of physicians by patients is not allowed. Negotiations between them and the insurance companies were pending throughout the past summer, but were frustrated by representatives of the companies.

Finally on Oct. 26, a representative meeting of physicians, held in Berlin, voted that "on and after Jan. 1, 1914, the insured population of Germany,—Dresden, Hamburg, and Berlin ex-

cepted,—shall not receive treatment through the insurance societies unless the latter meet the demands of the profession or the government sees fit to interfere." Following this action special meetings and conferences of medical societies and insurance agents were held on Nov. 5 in Munich and Baden. The federation of insurance societies, however, refused to comply or to recognize the right of the doctors to organize the profession for the protection of the general practitioner.

On Nov. 12 the Berlin Medical Society, at a special meeting, endorsed the action of the representative meeting of Oct. 26 by the passage of the following resolution:—

"In consideration of the fact that the manner in which the insurance societies desire to regulate the relation between the doctors and the societies under the new State Insurance Order most seriously imperils the freedom and independence of the medical profession, both of which are absolutely necessary for the continued scientific education and for the beneficial activity of the doctors, in the interest both of the patients and themselves, the *Berliner medizinische Gesellschaft* joins whole-heartedly with the German medical profession in its struggle with the managers of the insurance societies."

Thus matters have stood until the present time. If the doctors remain firm and united, they will effectually block the operation of the national insurance law on and after today. Either the companies must yield or the crown will intervene to settle the dispute.

We have not yet the subject of national insurance among the vexing problems of professional life and legislation in our country; but it may come to vex us sooner than we now expect. Meantime the experience of our German and British brethren is full not only of intense interest, but perhaps of profitable precedent.

MEDICAL CERTIFICATION FOR MARRIAGE.

THE reported refusal of members of the Milwaukee Medical Society to issue for three dollars certificates of complete physical examination and fitness for marriage, is evidence of a sensible reaction against the impracticability of enforcing a so-called eugenic marriage law requiring such medical certification of the contracting parties before the issuance of a marriage license. Such an examination as could reasonably be expected for that fee would be worth little for the detection of possibly communicable venereal infections, or of susceptibility to other undesirably transmissible diseases. Moreover, even with the most complete possible physical examination, a conscientious physician must in many cases hesitate to guarantee a man or a woman fit for matrimony. Finally, if the state makes it impossible to procure marriage licenses without medical certificate, the very persons whose procreation is least desirable will take measures to secure the ends of matrimony without license. After all, marriage, in the long run, must, like all other contracts, rest ultimately on the mutual confidence of the contracting parties. A man whose word cannot be trusted that he has not had syphilis or gonorrhea prior to marriage, cannot be trusted not to acquire them after the issuance of his medical certificate.

THE DIAGNOSIS OF HAMLET.

THE interest manifested from time to time in the medical problems afforded by Shakespeare's characters is only another evidence of the intense and vital reality of the personages whom he created. Indeed, in this respect, they equal Napoleon and the monarchs of England in the amount of post-mortem discussion to which they have given rise.

Recently an editorial in *The Medical Press and Circular* has essayed another inferential diagnosis on Hamlet. "Gouty diathesis, ptosis, and auto-intoxication" are held to be the pathologic trilogy which accounts not only for his obesity, cardiac symptoms, and other physical signs, but for his alternate saturnine gloom and hysteric gaiety. It is not long since one of the Freudians settled upon him the universal Oedipus complex. (This, by the way, will doubtless also soon be found in Peter Pan.) Next the endocrinologists will probably "explain" Hamlet, like Napoleon Bonaparte, on the basis of hypopituitarism.

As a matter of fact, Hamlet, whatever his physical organization, had a sane and noble mind; which remains for us as the most nearly perfect portrait that Shakespeare has left of himself.

MEDICAL NOTES.

EDWARD N. GIBBS MEMORIAL PRIZE FUND.—This fund was established by the wife and daughter of the late Edward N. Gibbs, and its income, which amounts to about five hundred dollars, is used in aiding investigators into the cause and treatment of diseases of the kidney. The recipient of the fund is chosen annually. The committee will select the worker for 1914, about the first of February, and requests all persons who desire to work under this fund, to send to the committee of the Edward N. Gibbs Memorial Prize Fund, 17 West 43rd Street, New York City, their application, together with a statement of their fitness to prosecute such investigations, giving the laboratory in which they have studied, and any researches conducted by them, in order that the committee may be guided in the selection of the recipient of the fund for 1914.

AMALGAMATION OF OHIO MEDICAL SCHOOLS.—Report from Ohio on Dec. 24 states that all details have finally been arranged for the projected union of the Starling Medical College with the medical school of Ohio State University.

MANUFACTURE OF MESOTHORIUM IN AMERICA.—It is announced on Dec. 21 that a Philadelphia corporation is to begin the commercial manufacture of mesothorium in this country, from extensive thorium-bearing deposits which it controls in the Carolinas.

TYPHOID FEVER IN WASHINGTON.—Report from Centralia, Wash., on Dec. 19, states that typhoid fever is at present epidemic in that town. On Dec. 15 and 16, 42 new cases of the disease were reported, making a total of 160 since the beginning of the outbreak.

DANGERS OF TRICHINOSIS.—On Dec. 21 the United States Department of Agriculture issued at Washington, D. C., a statement warning the public against the dangers of consuming uncooked pork. It has been found that of all hogs examined by government inspectors 1.41% are infected with trichinosis.

AN ABSTINENT CENTENARIAN.—William E. Tearis, who died in Jersey City, N. J., on Dec. 18, 1913, is said to have been born in 1810 at Huddersfield, England. He migrated to the United States in 1820. It is reported that he ascribed his persistent good health and longevity to his habits of deep breathing, interest in public affairs, and abstinence from alcoholic beverages.

SMALLPOX ON THE OHIO.—Report from Guantanamo on Dec. 18 states that the United States battleship *Ohio* was quarantined at that port on her arrival from the Mediterranean with smallpox aboard. One sailor died of the disease during the voyage, and 11 cases are now under treatment. The source of the infection has not been determined.

EUGENICS IN MILWAUKEE.—Report from Milwaukee, Wis., on Dec. 17, states that the Milwaukee Medical Society has voted that its members shall not issue, at the statutory charge of $3, certificates of complete physical examination and fitness for marriage, as required by the new eugenic marriage law in that state.

BOSTON AND NEW ENGLAND.

HOSPITAL CONCERTS FOR JANUARY.—It is announced the concerts of the Boston Hospital Music Fund for January, 1914, will be given at 2 p. m. as follows:—

Jan. 4—Cambridge Homes for the Aged.
" 11—St. Elizabeth's Hospital, Boston.
" 18—St. Luke's Home for Convalescents, Roxbury.
" 21—Home for Destitute Catholic Children, Boston.
" 25—Boston City Hospital.

HONOR TO A BOSTON SCIENTIST.—It is announced that Dr. Charles Sedgwick Minot, professor of comparative anatomy at the Harvard Medical School, has been recently elected an honorary member of the Anatomical Society of Great Britain and Ireland.

WORK OF RHODE ISLAND HOSPITAL.—The recently published fiftieth annual report of the trustees of the Rhode Island Hospital, at Providence, records the work of that institution for the year ended Sept. 30, 1913. During this period the total number of patients treated in the hospital was 7881; the total attendance in the out-patient departments, 40,414; and 4278 cases were treated in the accident rooms. Thirty-six nurses were graduated from the training school, and 101 autopsies were performed by the pathologist. There was a large pecuniary deficit.

INFECTIOUS DISEASES.—Cases of infectious diseases reported to the Boston Board of Health

for the week ending Dec. 23, 1913: Diphtheria, 42, of which 3 were non-residents; scarlatina, 89, of which 11 were non-residents; typhoid fever, 8; measles, 44; tuberculosis, 56, of which 1 was non-resident. This last item was for the week ending Dec. 20, 1913.

The death-rate of the reported deaths for the week was 19.57.

NEW YORK.

AMENDMENT OF SANITARY CODE.—At a recent meeting the City Board of Health passed a resolution amending the Sanitary Code by adding a new section, to take effect March 1, 1914, and to read: Bichloride of mercury, otherwise known as corrosive sublimate, shall not be held, kept, sold or offered for sale at retail in the dry form, except in colored tablets individually wrapped, the wrapper to have the word "*Poison*" in plain letters conspicuously placed, and dispensed in sealed containers of glass conspicuously labeled with the word "*Poison*" in red letters. This section, it is announced, does not apply to tablets containing one-tenth of a grain of bichloride, or less. The board has also placed trichinosis among the notifiable diseases.

HEALTH EXHIBIT.—On Dec. 17 a permanent health exhibit was opened in the building of the Department of Health, on Centre Street, and on this occasion the principal speaker was the venerable Dr. Stephen Smith, known as the "father of the New York Health Department," who was health commissioner from 1868 to 1875. Commissioner Lederle presided, and others who spoke were Prof. Charles F. Chandler, health commissioner from 1875 to 1883, and Drs. A. Jacobi, H. M. Biggs, and T. Mitchell Prudden. Among the exhibits is a fine model of the Otisville tuberculosis sanatorium.

A WET CLEANER.—The New York Edison Company, against which the Health Department has so long been bringing complaints for maintaining a smoke nuisance, has now, after a course of experimentation lasting three years and involving, it is said, an expenditure of $500,000, succeeded in securing an apparatus, known as a wet cleaner, which removes the objectionable qualities from the smoke from its plants. The smoke is driven at high speed through a large tank of water, and in this is left practically all the material which constituted a nuisance.

WORKMEN'S COMPENSATION LAW.—The workmen's compensation law, which was recently passed by the legislature, fixes rates of compensation the general basis of which is two-thirds of the average rate of wages paid at the time of injury, and each specified disability is to be compensated for by the payment of this average weekly sum for a defined number of weeks. In case of permanent partial disability the aggregate of weekly payments is limited to $3,500, while in case of death the employer is to pay funeral expenses not exceeding $100 and to pay to dependents of the deceased workman, as specified, an amount not more than two-thirds of the weekly wages. This ceases in case of a widow, with re-marriage; when, however, two years' compensation may be paid in a lump sum. In case of children the payment ceases when the age of 18 is reached. The only exception to the employer's liability is when "the injury is occasioned by the wilful intention of the injured employee to bring about the injury or death of himself or another, or where the injury results solely from the intoxication of the injured employee while on duty."

NEW HOSPITAL IN BROOKLYN.—A recent ten-day campaign in Brooklyn to raise $100,000 to erect a hospital for the House of St. Giles the Cripple, a home for crippled children at Garden City, resulted in the securing of $105,000. The movement was under the direction of Dr. B. B. Mosher, surgeon-in-chief to the institution. It is purposed to locate the new hospital in Brooklyn, and when the patients become convalescent they will be transferred to the Garden City home.

INADEQUATE PROVISION FOR FEEBLE-MINDED.—In a report of the committee on idiots and feeble-minded of the State Board of Charities it is stated that, while it is estimated that in the state of New York there are not less than 30,000 persons who should be segregated for their own protection and the good of the community, the state, including the minor political divisions, up to the present time has made provision for less than 4,000. With the completion of Letchworth Village and the contemplated extensions at the institutions at Rome and Newark, provision will have been made for the care of approximately 7,000; and the committee urges the expediting of the plans for these.

Current Literature

MEDICAL RECORD.

DECEMBER 13, 1913.

1. KERRISON, P. D. *Surgical Treatment of Diffuse Suppurative Labyrinthitis.*
2. *LEVIN, I. *Radium and Roentgen Therapy in Cancer.*
3. DIEFFENBACH, W. H. *Radium in the Treatment of Cancer.*
4. HARTSHORN, W. M. *Chorioepithelioma—with Report of a Fatal Case.*
5. ROUSSEL, A. E. *Acute Phlegmonous Cholecystitis: Report of a Case with Gangrenous Enteritis.*
6. GROS, E., AND REHFUSS, M. E. *Radiography in Pulmonary Gangrene.*

2. Levin discusses the value of radium in the treatment of cancer. It is indicated, he says, in all inoperable cases. Some cases are made operable by radium treatment, the malignancy being greatly diminished. [L. D. C.]

NEW YORK MEDICAL JOURNAL.

DECEMBER 13, 1913.

1. PEDERSEN, V. C. *Pus in the Urine.*
2. FITCH, W. E. *The Theory and Treatment of Diabetes.*
3. KNOPF, S. A. *The Physical, Mental, and Moral Vigor of Our School Children.*
4. HOGNET, J. P. *Spina Bifida.*
5. ORBISON, T. J. *The Kinetic Neuroses and Psychoses.*
6. ALEXANDER, R. M. *Intestinal Obstruction Due to a Benign Pelvic Tumor.*
7. MACY, M. S. *Medical Sociology in the Public Schools.*
8. BALLAGI, J. *An Epidemic of Trichinosis in Pennsylvania.*
9. PARKER, G. H. *The Nervous System: Its Origin and Evolution.*

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

DECEMBER 13, 1913.

1. *PEARCE, R. M. *The Scientific Basis for Vaccine Therapy.*
2. *WRIGHT, H. W. *The Problem of the Criminal in the Light of Some Modern Conceptions.*
3. BILLINGS, F., AND ROSENOW, E. C. *The Etiology and Vaccine Treatment of Hodgkin's Disease.*
4. LOWENBURG, H. *Etiology of Artificial Feeding. A Plea for the Study of Breast-Milk Problems.*
5. *HUFFMAN, O. V. *A Theory of the Cause of Ectopic Pregnancy.*
6. VOEGTLIN, C., AND WACHT, D. I. *Isolation of a New Vaso-constrictor Substance for the Blood and the Adrenal Cortex. Presence of the Substance in the Blood and Its Action on the Cardiovascular Apparatus.*
7. OTTENBERG, R., AND KALISKI, D. J. *Accidents in Transfusion. Their Prevention by Preliminary Blood Examination, Based on an Experience of One Hundred and Twenty-eight Transfusions.*
8. GREY, E. G., AND EMERSON, L. E. *A Striking Acquirement of Visualizing Power and the Development of Dreams Following a Cerebral Tumor Extirpation.*
9. HEMMETER, J. C. *Hyperthyroidosis of Intestinal Origin.*
10. THOMPSON, W. G. *Efficiency in Nursing.*
11. BEARD, R. O. *The Trained Nurse of the Future.*
12. HOWLAND, J. B. *Obligations of Hospitals and the Public to Training Schools for Nurses.*
13. EISENBREY, A. B. *Arteriovenous Aneurysm of the Superficial Femoral Vessels.*
14. CHRISTIAN, S. L., AND SANDERSON, E. L. *A New Method of Anastomosing the Ovarian Tube or Vas Deferens.*
15. LAWSON, G. B., AND THOMAS, E. A. *A Case of Hodgkin's Disease Treated with Benzine.*

1. Pearce believes that prophylactic vaccination rests on a sound scientific basis, but curative vaccination has no sound experimental basis. The only logical method is the use of autogenous vaccines. Mixed vaccines commercially prepared are unscientific and non-ethical. Vaccines rarely cure but rather aid by stimulating a languid process of immunization.

2. Wright makes a very sane plea for the more careful and systematic study of the criminal class and the individual criminal with the view to the gradual abolition of the penitentiary and the treatment of the criminal as a diseased individual and not a social malefactor.

5. Huffman, examining 68 specimens of tubal pregnancy found malformation of the tube in 54%. He believes that this evidence, besides the negative findings in regard to any obstruction or inflammation, is sufficient to warrant the establishment of the anomalous-embedding-area theory as the most logical of all explanations for ectopic pregnancy. [E. H. R.]

THE ARCHIVES OF INTERNAL MEDICINE.

NOVEMBER, 1913.

1. LUSK, G. *The Cause of the Specific Dynamic Action of Protein.*
2. *HARMER, T. W., AND DODD, W. J. *Sources of Error in the Use of the Stomach-Tube for Diagnosis. Preliminary Report.*
3. ASCHOFF, L. *Thrombosis.*
4. *HAWLEY, M. C. *Studies of Blood-Pressure in States of Excitement and Depression.*
5. WELLER, C. V. *Age Incidence in Carcinoma.*
6. WARTHIN, A. S. *Heredity with Reference to Carcinoma.*
7. HOPKINS, A. H. *A Clinical Study of Vagotonia.*
8. *LAMB, A. R. *Experiences with Prophylactic Typhoid Vaccination: Its Effect on Menstruation.*
9. *HAUGLIK, P. J., AND COLLINS, R. J. *Hexamethylenamin: The Liberation of Formaldehyd and the Antiseptic Efficiency under Different Chemical and Biological Conditions.*

2. Harmer and Dodd present a series of x-ray photographs which show gastric stasis in cases where the stomach tube had failed to obtain fasting contents. The source of error lies in the fact that the tube does not always accommodate itself to the curves of the stomach wall and its tip may become impinged so that it does not reach the most dependent portion of the organ. The writers point out that failure to recover gastric residuum with the unaided stomach tube cannot be accepted as conclusive evidence of the absence of gastric stasis.

3. Aschoff discusses at length the experiments of many investigators on the subject of thrombosis. Neither endothelial damage nor a direct coagulation

of the blood play any rôle in thrombosis formation. Slowing of the blood stream and alteration of the blood elements themselves, especially the platelets, are the chief factors in the production of both static and toxic thrombosis. In the formation of static thrombi slowing of the blood stream is of prime importance, while for the toxic varieties changes in the blood elements have the dominating influence. Coagulation of fibrin almost inevitably follows thrombosis. First comes the erection of a morphological structure by a process of agglutination. Fibrin ferment is obtained from the agglutinated elements and cements them together by coagulation.

4. Hawley studied the blood pressure in mental cases at the Illinois Psychopathic Institute. In mania, he observed that pressure was always elevated. In stuporous cases it was low, probably because of relaxed blood vessels. In depressed states blood pressure is lower than in manic states, but higher than in stuporous states. In melancholia it is normal unless there is muscular resistance or some other factor to produce a rise.

8. Lamb reports the results of prophylactic inoculation against typhoid fever among nurses and attendants at the Presbyterian Hospital, New York. Of especial interest are his observations on the effect of the vaccine upon menstruation; 53% of the nurses vaccinated showed some type of menstrual disturbance, the type being very variable and more than one occurring occasionally in one person. Allowing for unavoidable errors in deduction, there is a very striking relationship between the vaccine and the menstrual disturbances, and between these disturbances and those seen in typhoid fever. The writer believes that the vaccination of women should be so arranged that the first inoculation will come a few days after a period. The second and third injections can then be given at seven-day intervals, leaving about a week before the succeeding period. A pregnant woman should not be vaccinated unless there is urgent indication for it.

9. Hanglik and Collins report on an elaborate clinico-chemical study of the antiseptic action of hexamethylenamin in body fluids. They find that hexamethylenamin itself is not bactericidal and that its beneficial therapeutic effects depend upon the formaldehyde liberated from it. This liberation depends upon the excess hydrogen ion concentration of the solution above the neutral point. Alkalies prevent and acids facilitate this liberation of formaldehyde in all normal and pathologic body fluids. After administration hexamethylenamin is present, but does not liberate free formaldehyde in blood, cerebrospinal, pleural, pericardial and synovial fluids, vitreous and aqueous humors, and alkaline urine. Formaldehyde is liberated in acid urine and in the acid gastric contents. The administration of monosodium phosphate with hexamethylenamin, by rendering the urine acid, facilitates this liberation. The administration of alkalies with hexamethylenamin is irrational.

[L. D. C.]

THE LANCET.

NOVEMBER 22, 1913.

1. GODLEE, R. J. *The Origin and Growth of the Royal College of Surgeons of England.*
2. DUCKWORTH, D. *Some Requirements for Modern Clinical Teaching.*
3. RUSSELL, J. S. R. *The Treatment of Neurasthenia.*
4. *COLLINSON, H. *Notes on Four Cases of Ureteral Calculus, in One of Which a Complete Cast of the Ureter was Present.*
5. *CROWE, H. W. *The Primary Cause of Rheumatoid Arthritis.*
6. TAYLOR, A. L. *A Case of Tumor of the Pituitary Body.*

4. This is an interesting clinical description of four cases of ureteral calculus, including one in which there was a remarkable calculous cast of the entire left ureter. The treatment and diagnosis of this condition is discussed briefly.

5. Crowe describes rheumatoid arthritis as a disease caused primarily by a common inhabitant of the skin, the micrococcus epidermidis deformans. These conclusions, if true, are of interest. [J. B. H.]

NOVEMBER 29, 1913.

1. GRIFFITH, T. W. *The Development of Our Knowledge of the Diseases of the Heart.*
2. MERCIER, C. A. *Astrology in Medicine.*
3. BAYON, H. *The Leprosy Problem in the British Empire.*
4. *STEPHENSON, S. *Tuberculosis of the Eye.*
5. GLOYNE, S. K. *The Examination of Tuberculous Pleural Fluids.*
6. ALLAN, G. A. *Tuberculous Meningitis (Bovine Infection) in an Infant Aged Twelve Weeks.*
7. JONES, A. R. *The Free Air Treatment of Skin Grafts.*
8. DYKES, A. L. *Eye Coloration in Relation to the Incidence, Severity and Fatality of Scarlet Fever and Diphtheria.*

4. This paper is a careful review of the general subject of ocular tuberculosis, including a fair bibliography. It presents nothing new. [J. B. H.]

BRITISH MEDICAL JOURNAL.

NOVEMBER 15, 1913.

1. *MOTT, F. W. *The Degeneration of the Neurone in the Light of Recent Research, Especially in Relation to Syphilis and General Paralysis.*
2. *BELL, W. B. *The Relation of the Internal Secretions to the Female Characteristics and Functions in Health and Disease.*
3. SHARP, J. G. *Epidemic Cervical Adenitis.*
4. WILSON, A. C. *Treatment of Gonorrheal Epididymitis by Bur's Method.*

THE BRITISH MEDICAL ASSOCIATION.

SECTION OF TROPICAL MEDICINE.

5. *DOUGLAS, S. R., ET AL. *Discussion on Dysentery.*
6. PRICE, G. B. *Discussion on the Causes of Invaliding from the Tropics.*
7. CANTLIC, J. *Some Recent Observations on Sprue.*
8. BIRT, C. *Phlebotomus Fever and Dengue.*
9. LOW, G. C., ET AL. *Discussion on Filariasis.*

1. Mott discusses the evidence supporting the syphilitic origin of general paralysis and tabes dorsalis, describes the work of Noguchi, and his own investigations on this subject. There are some interesting plates.

2. Bell discusses the effects of excessive ovarian, thyroid, suprarenal and pituitary secretion upon the female characteristics, as well as insufficiency of the same secretions and their effects.

5. Douglas and others discuss the subject of amebic dysentery from various points of view, as to diagnosis, treatment, statistics, pathology and morphology. [J. B. H.]

NOVEMBER 22, 1913.

1. GEBHARD, T. W., AND HARRISON, L. W. *The Treatment of Syphilis in Its Earlier Stages.*
2. *SCOTT, G. B. *The Treatment of Syphilis at the Royal Naval Hospital, Chatham.*
3. JORDAN, A. E. *"Standard" Opaque Meal for Radiographic Examinations.*
4. ALDONS, G. F. *Some Acute Abdominal Cases.*

THE BRITISH MEDICAL ASSOCIATION.

SECTION OF BACTERIOLOGY AND PATHOLOGY.

5. *Dixon, W. E., Woodhead, G. S., Thiele, F. H., Embleton, D., and Goodall, E. W. *Anaphylaxis.*
6. Coplans, M. *The Action of the Asbestos Minerals and Allied Materials on Bacterial and Other Substances.*
7. Farrant, R. *Hyperthyroidism: Its Experimental Production in Animals.*
8. Galt, H. M. *On the Value of the Blood Count as an Aid to Diagnosis in Obscure Bacterial and Other Infections.*
9. *Buchanan, R. M. *Empusa Muscae as a Carrier of Bacterial Infection from the House-fly.*
10. Crofton, W. M. *Two Cases of Paratyphoid B. Infection Treated with Vaccine.*
11. Coplans, M., and Lloyd, W. G. *On the Action of Asbestos on Certain Physiological Substances.*
12. Lyons, W. C. *Proteose-free Tuberculin.*

1, 2. These are excellent short practical papers dealing with syphilis and its treatment. Although nothing new is presented, the subject is handled so clearly and concisely as to render the article of distinct value.

5. These papers are of scientific rather than clinical interest. The difficult and complex subject of anaphylaxis is discussed from various standpoints.

9. Buchanan discusses the house-fly as a carrier of infection, especially of various fungoid growths such as empusa muscae. There are numerous excellent plates descriptive of this growth. [J. B. H.]

NOVEMBER 29, 1913.

1. *Lewis, T. *Paroxysmal Dyspnea in Cardio-Renal Patients, with Special Reference to "Cardiac" and "Uremic" Asthma.*
2. Bayon, H. *The Clinical and the Bacteriological Aspects of Leprosy.*
3. Blaxland, A. J., and Claridge, G. P. C. *Remarks on Acute Pancreatitis, with Notes of Seven Cases.*
4. *Deanesly, E. *The Diagnosis and Treatment of Intestinal Obstruction.*
5. Lawrence, H. G. *A Case Contributing to the Study of Fever Without Other Physical Signs.*
6. Heath, O. *The Significance of Frequency and Tenesmus in Acute Cystitis.*
7. Parker, R. *A Simple Splint for Flail Elbow.*

1. Lewis discusses cardiac and renal asthma as seen in many cardio-renal cases and discusses the cause of this phenomenon. Fundamentally he believes it to be due to an increased acidosis of the blood, which he discusses in some detail.

4. Deanesly discusses at some length the diagnosis and treatment of intestinal obstruction. He believes that large numbers of patients die each year from intestinal obstruction of a mechanical nature easily remedied by operation, who have been treated for chronic constipation with drugs, etc. He describes the symptoms, signs, etc., and operative treatment of this condition. [J. B. H.]

THE QUARTERLY JOURNAL OF MEDICINE.

VOL. 7. NO. 25. OCTOBER, 1913.

1. *Ritchie, W. T. *Further Observations on Auricular Flutter.*
2. *Graham, G., and Poulton, E. P. *On the Variations in the Excretion of Endogenous Uric Acid Produced by Changes in Diet.*
3. Hall, I. W. *Review. Uricemia and Gout.*
4. *Parkinson, J., and Rowlands, R. A. *Strychnine in Heart Failure.*
5. *Sutherland, G. A., and Paterson, H. *On a Type of Cerebral Mal-development (Forelrain Aphasia).*
6. *Wallis, R. L. M. *On Sulphemoglobinemia.*

1. By auricular flutter is meant an extremely rapid but rhythmical action of the auricles, as distinguished from auricular fibrillation, in which there is a complete absence of rhythm. Ritchie has observed one case of auricular flutter and complete heart-block for seven and one-half years; the auricular rate varied from 250 to 276 a minute. Lately, however, the auricular rate has fallen to 190, and there has been a change in the electro-cardiagram and the auricular rate has become subject to vagus control, so that Ritchie considers the present state of the heart to be one of auricular tachysystole rather than true flutter. Ritchie also describes in detail the findings in the heart of a fatal case of flutter, in which lesions of the sino-auricular node were the most conspicuous. Lastly, he reports a case in which there were transitions between fibrillation, flutter, and an intermediate state. Under the influence of digitalis, as often happens, the condition changed to one of permanent fibrillation. This change has an analogy in the change from flutter to fibrillation noted experimentally when the vagus is stimulated during faradization of the dog's heart.

2. Graham and Poulton found a fall in the endogenous uric acid output under three conditions of nutrition: (1) On a diet of protein and fat of insufficient caloric value, while if most of the fat in this diet were replaced by carbohydrate there was no fall in the output; (2) in starvation during the first few days; and (3) on a diet of carbohydrate and fat. They consider that the cause of the diminution is "the interaction of protein and carbohydrate metabolism."

4. This article by Parkinson and Rowlands should be read by all who swear by strychnine as a cardiac stimulant. A careful study of the action of this drug in fifty cases of severe cardiac failure failed to show any effect whatever on the pulse rate, respiratory rate, blood pressure or general symptoms. The dose was one-fifteenth grain given subcutaneously, and the observations were continued for an hour after a single dose.

5. Sutherland and Paterson describe what they claim to be a new disease of the brain, on the basis of two cases. The symptoms during life were striking, and pointed to complete failure of development of the cerebral cortex, viz., absolute lack of intelligence, sight or hearing, and of sensation. Tonic and clonic spasms were a constant feature, the most frequent position being one of oposthotonos with pleurosthotonos, with the arms flexed and the legs extended. Tachycardia and tachypnea were very marked. At the autopsy there was almost complete aplasia of the cortex, with the exception of the occipital lobes. The vacant space was filled by a large amount of fluid in the pia-arachnoid.

6. Wallis throws new light on that remarkable disease, sulphemoglobinemia. The condition is characterized by cyanosis, often intermittent, headache, weakness and constipation. In methemoglobinemia the symptoms are the same except that there is diarrhea instead of constipation. The diagnosis depends upon the spectroscope examination of the blood, which shows a single band in the red in each of these two conditions. The band due to sulphemoglobin remains after the addition of ammonium sulphide to the blood, while that due to methemoglobin disappears. Wallis found a very strong reducing substance in the blood serum in all his five cases, the nature of which was not determined. Furthermore, the saliva in all contained large amounts of nitrites, and on cultivation yielded constantly a nitroso-bacillus (*i.e.* a bacillus yielding nitrites on cultivation in protein-containing media). A powerful reducing substance was also found in the cultures. [W. T.]

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT

No. 47. NOVEMBER 25, 1913.

1. *PAYR, E. *The Prophylaxis and Treatment of Peritoneal Adhesions.*
2. PÄSSLER, H. *Are the So-called Diatheses Anomalies of the Constitution?*
3. V. OPENCHOWSKI, T. *The Localization of Gastric Ulcer.*
4. SCHICK, B. *The Diphtheria-toxin Skin Reaction as a Measure for Prophylactic Diphtheria Serum Injections.*
5. FRITSCH. *Roentgen-ray Treatment of Tubercular Glands of the Neck.*
6. LOCH, R. *The Treatment of Scarlet Fever by the Injection of Serum from Convalescent Scarlet Fever Patients.*
7. FUNK, C. *Diet in Treatment from the Point of View of Studies with Vitamin.*
8. *DUNZELT, H. *The Differentiation of White Blood Corpuscles in the Counting Chamber.*
9. HEINZ, R. *Diogenal, a Bromide Containing Derivative of Veronal.*
10. BOAS, H. *Two Cases of Syphilitic Re-infection in Patients Treated by Salvarsan and Mercury Combined. The Results of Such Combined Treatment.*
11. V. BAEYER, H. *The Mechanical Treatment of the Ataxia of Tabes.*
12. BARDACH, K. *The Therapeutic Use of Intravenous Injections of Arthigonin.*
13. BUFE. *Results with Urea Bromin in the Treatment of Alcoholism.*
14. FRANKHAUSER, K. *The Treatment of a Severe Burn by Hot Air Currents.*
15. BACHEM, C. *A Stable Substitute for Tincture of Iodine in Solid Form.*
16. CIMBAL, W. *The Prevention of Poisoning from Hypnotics.*
17. ORLOVIOUS. *A New Flask for the Sterile Withdrawal of Blood for Bacteriological Investigations.*
18. LESCHKE, E. *A Trochar with a Side Opening.*
19. FRIEDRICH. *The Greek Military Hospitals at Saloniki and Athens at the End of the Second Balkan War. (Conclusion.)*
20. NASSAUER, M. *The High School for Physicians and Patients.*

1. Payr reports preliminary observations on the treatment of intestinal disturbances with the electromagnet. Payr has found that reduced iron oxide given in capsules is insoluble in neutral or weakly alkaline solution and is therefore not absorbed from the intestinal canal. In this way the intestines become rendered magnetic and in experimental animals were drawn in the direction of an electro-magnet placed on the abdominal wall. Experimentally, Payr found that the large intestine, stomach, or loops of small intestine could be moved in any desired direction, and that it was possible to break up artificial adhesions induced by iodine. His observations were controlled by x-ray plates. The process was harmless, since the animals showed no toxic manifestations, and as the intestines so treated showed no abdominal histological changes. Identical studies were made on a few patients. The results confirmed those made on animals, but as the technic was not perfected, Payr does not describe them in detail. Payr believes that by magnetizing the intestines in such fashion, much assistance may be derived in the treatment and diagnosis of intestinal adhesions. Future work will determine the value of his preliminary notes.

8. Dunzelt has devised a stain which may be used in an ordinary white blood counter to differentiate the types of leucocytes without coloring the red corpuscles. Its advantages are its simplicity and accuracy of staining. [R. F.]

ARCHIV FÜR KLINISCHE CHIRURGIE.

VOL. 102. PART 3.

24. *KÖRTE, W. *The Surgical Treatment of Malignant Disease of the Large Intestines (Except the Rectum).*
25. ROTTER, J. *Surgical Treatment of Cancer of the Colon.*
26. *NUNBERG, M. *Clinical Aspect of Epidural Hematoma.*
27. SCHANZ, A. *Treatment of Scoliosis.*
28. BÜDINGER, K. *Plastics on the Curvature in Hourglass Stomach.*
29. ALAPY, H. *Resection of the Knee-joint in Children.*

24. Körte's article is a detailed review of the treatment of cancer of the large intestine. His conclusions are as follows: (1) The particular dangers of resection of the large intestine, *i.e.* collapse and peritonitis, are due at one time to the peculiar anatomical relations of the portion of the intestines, at another time to the difficulty of handling its contents. (2) In acute obstruction it is possible to attain the drainage of the intestine only by means of colostomy; the radical operation must be done later. 3. In chronic obstruction, as well as in case of uncertain nourishment of the intestinal ends, the bringing out and suturing of the loops to the abdominal wall is the safer though slower method. (4) With sufficient drainage, good blood supply and apposition of the ends without tension, primary resection and suture are indicated. (5) The different anatomical relations of each part of the large intestine require correspondingly different operative technic. (6) The likelihood of cure is favorable.

7. Of the palliative operations, enteroanastomosis is the best procedure provided there is no obstruction. In cases with obstruction, colostomy is the best method. Colectomy and enteroanastomosis should be done secondarily to drainage of the intestine.

26. Nunberg, from a study of the cases of intracranial hemorrhage in Kraske's clinic, concludes that epidural hemorrhage can cause death without giving any of the classical symptoms of increased intracranial pressure. Certain other signs appeared, however, among which may be noted motor unrest and disturbance of the oculomotor nerve. He believes that exploratory trephine or puncture should be done more frequently, and that such procedure has been without ill effect in Kraske's clinic. [G. G. S.]

DEUTSCHE MEDIZINISCHE WOCHENSCHRIFT.

No. 37. SEPTEMBER 11, 1913.

1. *HERING, H. E. *The Pathology of Cardiac Insufficiency.*
2. LAMPE, A. E. *Abderhalden's Test in Phthisis.*
3. FULCI, F. *Power of Regeneration of the Mammalian Thymus.*
4. STRAUSS, H. *Tests of Liver Function.*
5. BUSCHKE, A. *The Relation Between Human and Animal Syphilis.*
6. BECKER, W. H. *Internal Treatment of Exophthalmic Goitre.*
7. DREESEN, H. *Diathermia.*
8. *WOLFF, G. *A Case of Tetanus Neonatorum with Recovery.*
9. SAVINI, E. *Varicella in Adults.*
10. GAUSE, A. *Simple Qualitative and Quantitative Test for Sugar in the Urine by Means of Fermentation.*
11. LOEB, S. *Tests of Light and Color Perception.*
12. PICK, J. *Treatment of Chronic Frontal Sinusitis.*

1. Hering states that cardiac insufficiency comprises not only diminished contractility, but also any other change affecting its function, as, for example, hyperirritability. The early symptoms of cardiac

weakness are largely subjective, and are often overlooked. Irregularity, extra systole and dropped beats are all early symptoms, and denote, besides loss of contractility, less power to generate and transmit impulses. Often these symptoms are accompanied by areas of hypersensitiveness in the skin, as Mackenzie has pointed out. The author speaks of these symptoms as the economic symptoms, and believes that they signify loss of tonus. In syphilitic aortitis, they denote either beginning occlusion of the coronaries or involvement of the aortic cusps. The author lays great emphasis on the importance of searching for these economic symptoms in all cases, and in establishing their presence or absence in the presence of other symptoms of cardiac disease.

9. Wolff's patient was a child nine days old when symptoms first developed. It was given 300 units of tetanus antitoxin during three days. The first dose of serum was injected near the umbilicus, the rest in the abdominal wall, part subcutaneously, part intramuscularly. Chloral, 0.5 gms., was administered by rectum daily for eighteen days. The maximum dose given in one day was 1.5 gms. The child was kept in profound stupor, and was fed through a stomach tube. The author believes that the profound narcosis conserved the child's strength, and allowed the administration of nourishment. After the eighteenth day the chloral was reduced to 0.25 gm. On the twenty-seventh it was omitted and natural feeding begun. [C. H. L., JR.]

No. 38. SEPTEMBER 18, 1913.

1 AND 2. *HIRSCH, C., AND LOEB, O. *Arteriosclerosis.*
3. KAUFFMANN, R., AND POPPER, H. *Paroxysmal Tachycardia.*
4. *MÖLLERS, B. *Etiology of Surgical Tuberculosis.*
5. HAHN, B. *Treatment of Acute Pleural Emphysema.*
6. STEINER, M. *Spontaneous Cure of Echinococcus Cyst of the Lung.*
7. SENGE, J. *Hypophysin.*
8. LANGE, H. *A New Method of Sterilizing Small Quantities of Drinking Water.*
9. NÖRDENLOFT, S. *Endoscopy by Means of a Trocar.*

1 and 2. Hirsch's article is a discussion of the theoretical causes of arteriosclerosis.

Loeb reports the production of arteriosclerosis in dogs; the first time the lesion has been produced in animals other than rabbits. He has demonstrated that lactic acid may be instrumental in producing the condition, a finding of importance in view of the fact that muscular work greatly increases the lactic acid content of the blood. Loeb suggests that this increased production may be combated by avoiding extreme exertion and by dietetic limitation, or that the action of the acid on the arteries may be in some degree neutralized by increasing the ammonia content of the blood.

4. The author has collected 163 cases of tuberculosis of the bones and joints in which careful bacteriological examinations were made. Of these, only 4 cases showed the bovine type of bacillus. In marked contrast are the findings of Frazer, who in 70 cases found 41 of the bovine type, 26 of the human type, and 3 of mixed infection. [C. H. L., JR.]

BULLETINO DELLE SCIENZE MEDICHE.

APRIL, 1913.

1. *BECCARI, L. *The Function of the Sinus and the Automatism of the Frog's Heart.*
2. LOUGO, C. *The Action of Sodium Chloride on Normal and Pathological Kidneys. (To be continued.)*

1. Beccari presents three graphic tracings from experiments on the frog's heart, from which he concludes that the only really automatic centre of cardiac activity is the venous sinus and its gangliary elements.

Miscellany.

REPORT OF BRITISH ROYAL COMMISSION ON VENEREAL DISEASES.

THE British Royal Commission on Venereal Diseases, which was appointed as a result of the action taken by the International Medical Congress at its meeting in London last August, has recently issued its first official report of its first two meetings on Nov. 7 and 10. Preliminary evidence was given by Dr. Stevenson from the general register office, and statistic evidence by General May as to the prevalence of venereal diseases in the Navy:—

"Dr. Stevenson thought that although the quality of certification generally was improving, there undoubtedly existed a reluctance on the part of medical practitioners to certify venereal diseases as a cause of death, and that consequently the figures contained in the report were minimum figures. He agreed also that there were doubtless many cases of death indirectly due to venereal diseases which are not demonstrated by the tables of the report. At the same time he considered that although the figures do not express the facts, they bear some relation to the facts, and must be regarded as having a distinct comparative value. For instance, he attached importance to figures showing that the death-rate from syphilis in London is four times as high is in the rural districts, and that in descending the scale from the densely populated to the rural districts the death-rate becomes progressively lower.

Dealing with the question of improving certification, Dr. Stevenson strongly advocated a general system of confidential certification under which certificates of the cause of death would not be handed over to the surviving relatives.

"The director-general of the Navy Medical Department gave figures extending over the period from 1905 to 1912. These figures showed evidence of decline both in regard to syphilis and gonorrhea. The figures of the number of cases, and of the number of days lost through sickness for 1912 showed a far more accentuated fall as regards venereal diseases than for any other disease.

"The director-general considered that the reduction in the figures might be due rather to the better education of the sailor in health matters than to the diminution in the prevalence of diseases in the ports. He thought that the men had absolute confidence in their medical officers, and that concealment of the disease was practically non-existent. It is the practice in the navy for medical officers to give lectures on hygiene to the men, and this system was beginning to show very good results, and the admiralty had great hopes of it. With regard to invalidings from the service on account of venereal disease, the director-general thought that the rather sharp fall in

1911, which was disclosed in the tables, should be attributed to improved methods of treatment."

FREE PUBLIC LECTURES ON MEDICAL SUBJECTS.

THE faculty of medicine of Harvard University offers a course of free public lectures, to be given at the medical school, Longwood Avenue, Boston, on Sunday afternoons, beginning Jan. 4, and ending May 10, 1914. The lectures will begin at 4 o'clock and the doors will be closed at five minutes past the hour. No tickets are required. The schedule of lectures is as follows:—

Jan. 4—Dr. W. B. Cannon, Recent studies of the bodily effects of fear and rage.
Jan. 11—Dr. John Lovett Morse, Rational infant feeding.
Jan. 18—Dr. J. E. Goldthwait, The effect of habits of posture upon health.
Jan. 25—Dr. R. B. Greenough, The tumors and diseases of the breast. (To women only.)
Feb. 1—Dr. J. S. Stone, Some surgical diseases of childhood and their causes.
Feb. 8—Dr. A. Coolidge, Jr., Adenoids and tonsils.
Feb. 15—Dr. Charles S. Minot, Microscopical mechanisms of the brain.
Feb. 22—Dr. E. W. Taylor, Some Causes of nervous instability.
March 1—Dr. William P. Cooke, Tooth preservation in children and adults.
March 8—Dr. Charles J. White, Skin nostrums.
March 15—Dr. E. H. Bradford, Chairs, backache and curved spine.
March 22—Dr. Charles H. Williams, Spectacles and eye-glasses. Their use and abuse.
March 29—Dr. E. P. Joslin, Diet in relation to diseases of the kidney.
April 5—Dr. Clarence J. Blake, Aid for the deaf.
April 12—Dr. E. E. Southard, Eugenics versus cacogenics.
April 19—Dr. F. S. Newell, The hygiene of pregnancy. (To women only.)
April 26—Dr. J. Bapst Blake, The diagnosis and immediate treatment of lesser injuries, including the use and abuse of antiseptics.
May 3—Dr. W. H. Smith, Arteriosclerosis.
May 10—Dr. E. H. Nichols, The sexual instinct: its use and abuse. (To men only.)

APPOINTMENTS.

DR. LIVINGSTON FARRAND, professor of anthropology in Columbia University, has been recently elected president of the University of Colorado.

DR. WILLIAM JOSEPH GALLIVAN, of South Boston, chief of the division of child hygiene in the Boston health department, has recently been appointed by the Mayor to the vacancy on the Board of Health left by the resignation, over two years ago, of Dr. Samuel Holmes Durgin.

RECENT DEATHS.

DR. JAMES P. STEDMAN, who died Dec. 24 in Brockton, Mass., was born at Yarmouth, N. S., in 1857. He received the degree of M.D. in 1882 from Boston University Medical School, and since 1892 had practised his profession in Brockton. He was a member of the American Institute of Homeopathy and of the Massachusetts Homeopathic Medical Society. He is survived by his widow, by one daughter, and by one son.

DR. EDGAR MARTINDALE HERMANCE, a prominent physician of Yonkers, N. Y., died from pneumonia on December 22, at the age of 59 years. He was a native of New York City, and was graduated from the College of Physicians and Surgeons in 1878. He had served as commissioner of public safety and as president of the board of health of Yonkers, and at the time of his death was consulting surgeon to St. John's Riverside Hospital and the Westchester County Hospital.

DR. WILLIAM C. BARTRAM, of Newburgh, N. Y., assistant surgeon and radiologist to St. Luke's Hospital in that city, died on December 17 from septicemia resulting from a needle prick received while operating a few weeks previously. He was 34 years old and was graduated from the medical department of Columbia University, New York, in 1904; after which he took a course of post-graduate study in Vienna.

DR. GARY H. WOOD, of Antwerp, N.Y., died from Bright's disease on December 18, at the age of 50 years. He was for some time a member of the Legislature from Jefferson County.

DR. RICHARD G. P. DIEFFENBACH, of Newark, N. J., died from cerebral apoplexy on December 17, at the age of 62. He was attending surgeon to the Newark German Hospital and treasurer of that institution.

SOCIETY NOTICE.

THE BOSTON SOCIETY OF MEDICAL SCIENCES.—The next meeting will be held on Tuesday evening, Jan. 6, 1914, in the amphitheatre of the Peter Bent Brigham Hospital at 8.15 o'clock. The meeting will be conducted by the Historical Club of the Harvard Medical School (Mr. William J. Kerr, secretary).

Papers will be presented as follows:—
Dr. Thomas Ordway, "Hodgkin's Disease." Exhibition of a case.
Dr. L. W. Hackett, "The Medical Side of Benjamin Franklin."
Dr. E. E. Southard, "Some Neuropathological Worthies."

THOMAS ORDWAY, *Secretary and Treasurer*,
Harvard Medical School.

BOOKS AND PAMPHLETS RECEIVED.

Northwestern University Bulletin. Medical School Announcement, 1913-1914. Chicago, Ill.

A Model State Law for Morbidity Reports. Reprint No. 133, from Public Health Reports. Washington, D. C.

Fumigation of Vessels for the Destruction of Rats. Reprint No. 132 from Public Health Reports, Washington, D. C.

Coprostasis by Sir James Sawyer. Cornish Bros., Birmingham. 1912.

Proceedings of the Pathological Society of Philadelphia. New Series Vol. xv, Old Series Vol. xxxiii. Philadelphia. 1913.

The Impossibility of Differentiation between Monkey Blood and Human Blood by Means of Antisera Derived from Monkeys, by Hugh K. Berkeley. Reprint.

Protein-Split Products in Relation to Immunity and Disease, by Victor C. Vaughan, M.D., Victor C. Vaughan, Jr., and J. Walter Vaughan, M.D. Lea & Febiger. 1913.

Principles and Practice of Gynecology, by E. C. Dudley, A.M., M.D. Sixth Edition. Lea & Febiger. 1913.